This Includes:

- ➢   **English**
- ➢   **Computer Technology**
- ➢   **Mathematics**

for those who want
to fly in the sky of banking

Proverbs/Idioms

Some proverbs/idioms are given below together with their meanings. Choose the correct meaning of proverb/idiom, If there is no correct meaning given, E (i.E.) 'None of these' will be the answer.

1. To make clean breast of
A. To gain prominence
B. To praise oneself
C. To confess without of reserve
D. To destroy before it blooms
E. None of these
Answer: Option C

2. To keeps one's temper
A. To become hungry
B. To be in good mood
C. To preserve ones energy
D. To be aloof from
E. None of these
Answer: Option B

3. To catch a tartar
A. To trap wanted criminal with great difficulty
B. To catch a dangerous person
C. To meet with disaster
D. To deal with a person who is more than one's match
E. None of these
Answer: Option B

4. To drive home
A. To find one's roots
B. To return to place of rest
C. Back to original position
D. To emphasize
E. None of these
Answer: Option D

5. To have an axe to grind
A. A private end to serve
B. To fail to arouse interest
C. To have no result
D. To work for both sides
E. None of these
Answer: Option A

6. To cry wolf
A. To listen eagerly
B. To give false alarm
C. To turn pale
D. To keep off starvation
E. None of these
Answer: Option B

7. To end in smoke
A. To make completely understand
B. To ruin oneself
C. To excite great applause
D. To overcome someone
E. None of these
Answer: Option B

8. To be above board
A. To have a good height
B. To be honest in any business deal
C. They have no debts
D. To try to be beautiful
E. None of these
Answer: Option B

9. To put one's hand to plough

A. To take up agricultural farming

B. To take a difficult task

C. To get entangled into unnecessary things

D. Take interest in technical work

E. None of these

Answer: Option B

10. To pick holes

A. To find some reason to quarrel

B. To destroy something

C. To criticise someone

D. To cut some part of an item

E. None of these

Answer: Option C

11. To leave someone in the lurch

A. To come to compromise with someone

B. Constant source of annoyance to someone

C. To put someone at ease

D. To desert someone in his difficulties

E. None of these

Answer: Option D

12. To play second fiddle

A. To be happy, cheerful and healthy

B. To reduce importance of one's senior

C. To support the role and view of another person

D. To do back seat driving

E. None of these

Answer: Option C

13. To beg the question

A. To refer to

B. To take for granted

C. To raise objections

D. To be discussed

E. None of these

Answer: Option B

14. A black sheep

A. An unlucky person

B. A lucky person

C. An ugly person

D. A partner who takes no share of the profits

E. None of these

Answer: Option E

Explanation:

In the English language, 'Black sheep' is an idiom used to describe an odd or disreputable member of a group, especially within a family.

15. A man of straw

A. A man of no substance

B. A very active person

C. A worthy fellow

D. An unreasonable person

E. None of these

Answer: Option A

16. To smell a rat

A. To see signs of plague epidemic

B. To get bad small of a bad dead rat

C. To suspect foul dealings

D. To be in a bad mood

E. None of these

Answer: Option C

17. To hit the nail right on the head

A. To do the right thing

B. To destroy one's reputation

C. To announce one's fixed views

D. To teach someone a lesson

E. None of these

Answer: Option A

Explanation:

To do exactly the right thing; to do something in the most effective and efficient way.

18. To set one's face against

A. To oppose with determination

B. To judge by appearanceC.

To get out of difficulty

D. To look at one steadily

E. None of these

Answer: Option A

Synonyms

In the following the questions choose the word which best expresses the meaning of the given word.

1. CORPULENT

A. Lean

B. Gaunt

C. Emaciated

D. Obese

Answer: Option D

2. BRIEF

A. Limited

B. Small

C. Little

D. Short

Answer: Option D

3. EMBEZZLE

A. Misappropriate

B. Balance

C. Remunerate

D. Clear

Answer: Option A

Explanation:

Main Entry: embezzle

4. VENT

A. Opening

B. Stodge

C. End

D. Past tense of go

Answer: Option A

5. AUGUST

A. Common

B. Ridiculous

C. Dignified

D. Petty

Answer: Option C

6. CANNY

A. Obstinate

B. Handsome

C. Clever

D. Stout

Answer: Option C

7. ALERT

A. Energetic

B. Observant

C. Intelligent

D. Watchful

Answer: Option D

8. WARRIOR
A. Soldier
B. Sailor
C. Pirate
D. Spy
Answer: Option A

9. DISTANT
A. Far
B. Removed
C. Reserved
D. Separate
Answer: Option A

10. ADVERSITY
A. Failure
B. Helplessness
C. Misfortune
D. Crisis
Answer: Option C
Explanation:
Adversity is a very difficult or unfavorable situation.

11. FAKE
A. Original
B. Imitation
C. Trustworthy
D. Loyal
Answer: Option B

12. INDICT
A. Condemn
B. Reprimand
C. Accuse

D. Allege
Answer: Option C

13. STRINGENT
A. Dry
B. Strained
C. Rigorous
D. Shrill
Answer: Option C

14. LAMENT
A. Complain
B. Comment
C. Condone
D. Console
Answer: Option A

15. HESITATED
A. Stopped
B. Paused
C. Slowed
D. Postponed
Answer: Option B

16. RESCUE
A. Command
B. Help
C. Defence
D. Safety
Answer: Option B

17. ATTEMPT
A. Serve
B. Explore
C. Try
D. Explain
Answer: Option C

18. FORAY
A. Maraud
B. Contest
C. Ranger
D. Intuition
Answer: Option A

19. RECKLESS
A. Courageous
B. Rash
C. Bold
D. Daring
Answer: Option B

20. CONSEQUENCES
A. Results
B. Conclusions
C. Difficulties
D. Applications
Answer: Option A

21. IMPROVEMENT
A. Advancement
B. Betterment
C. Promotion
D. Preference
Answer: Option B

22. INEBRIATE
A. Dreamy
B. Stupefied
C. Unsteady
D. Drunken
Answer: Option D

23. STERILE

A. Barren
B. Arid
C. Childless
D. Dry
Answer: Option A

24. ABJECT
A. Challenge
B. Miserable
C. Deny
D. Disobey
Answer: Option B

25. MOVING
A. Taking
B. Toying
C. Shifting
D. Turning
Answer: Option C

26. IRONIC
A. Inflexible
B. Bitter
C. Good-natured
D. Disguisedly sarcastic
Answer: Option D

27. TIMID
A. Fast
B. Slow
C. Medium
D. Shy
Answer: Option D

28. EXTRICATE
A. Pull
B. Free

C. Tie

D. Complicate

Answer: Option B

29. NEUTRAL

A. Unbiased

B. Non-aligned

C. Undecided

D. Indifferent

Answer: Option A

30. SHALLOW

A. Artificial

B. Superficial

C. Foolish

D. Worthless

Answer: Option B

31. DIVERSION

A. Amusement

B. Distortion

C. Deviation

D. Bylane

Answer: Option C

32. INSOLVENT

A. Poor

B. Bankrupt

C. Penniless

D. Broke

Answer: Option B

33. INEXPLICABLE

A. Confusing

B. Unaccountable

C. Chaotic

D. Unconnected

Answer: Option B

34. FEEBLE

A. Weak

B. Vain

C. Arrogant

D. Sick

Answer: Option A

35. TRANSIENT

A. Transparent

B. Fleeting

C. Feeble

D. Fanciful

Answer: Option B

36. BARE

A. Uncovered

B. Tolerate

C. Clear

D. Neat

Answer: Option A

37. REPEAL

A. Sanction

B. Perpetuate

C. Pass

D. Cancel

Answer: Option D

38. SALACITY

A. Bliss

B. Depression

C. Indecency

D. Recession

Answer: Option C

39. ECSTATIC
A. Animated
B. Bewildered
C. Enraptured
D. Illful
Answer: Option C

40. ADMONISH
A. Punish
B. Curse
C. Dismiss
D. Reprimand
Answer: Option D

41. DILIGENT
A. Progressive
B. Brilliant
C. Inventive
D. Hard-working
Answer: Option D

42. PIOUS
A. Pure
B. Pretentious
C. Clean
D. Devout
Answer: Option D

43. BROWSE
A. Heal
B. Deceive
C. Examine
D. Strike
Answer: Option C

44. INFREQUENT
A. Never
B. Usual
C. Rare
D. Sometimes
Answer: Option C

45. RESTRAINT
A. Hindrance
B. Repression
C. Obstacle
D. Restriction
Answer: Option D

46. DEIFY
A. Flatter
B. Challenge
C. Worship
D. Face
Answer: Option C

47. HARBINGER
A. Messenger
B. Steward
C. Forerunner
D. Pilot
Answer: Option C

48. VENUE
A. Place
B. Agenda
C. Time
D. Duration
Answer: Option A

49. CANDID
A. Apparent
B. Explicit
C. Frank

D. Bright

Answer: Option C

50. MELD

A. To soothe

B. Merge

C. Purchase

D. Glisten

Answer: Option B

51. LYNCH

A. Hang

B. Madden

C. Kill

D. Shoot

Answer: Option C

52. TORTURE

A. Torment

B. Chastisement

C. Harassment

D. Terror

Answer: Option A

53. ABUNDANT

A. Ripe

B. Cheap

C. Plenty

D. Absent

Answer: Option C

54. ENTIRE

A. Part

B. Quarter

C. Whole

D. Half

Answer: Option C

55. DESTITUTION

A. Humility

B. Moderation

C. Poverty

D. Beggary

Answer: Option C

56. WRETCHED

A. Poor

B. Foolish

C. Insane

D. Strained

Answer: Option A

57. INTIMIDATE

A. To hint

B. Frighten

C. Bluff

D. Harass

Answer: Option B

58. CANTANKEROUS

A. Quarrelsome

B. Rash

C. Disrespectful

D. Noisy

Answer: Option A

59. RANT

A. Praise inordinately

B. Formalise

C. To preach noisily

D. Treat with screen

Answer: Option C

60. ZANY

A. Clown
B. Pet
C. Thief
D. Magician
Answer: Option A

61. TACITURNITY
A. Dumbness
B. Changeablemess
C. Hesitation
D. Reserve
Answer: Option D

62. MASSACRE
A. Murder
B. Stab
C. Assassinate
D. Slaughter
Answer: Option D

63. KEN
A. Ignorance
B. Witness
C. Trial
D. Knowledge
Answer: Option D

64. WARY
A. Sad
B. vigilant
C. Distorted
D. Tired
Answer: Option B

65. RABBLE
A. Mob
B. Noise
C. Roar
D. Rubbish
Answer: Option A

66. MAYHEM
A. Jubilation
B. Havoc
C. Excitement
D. Defeat
Answer: Option B

67. PONDER
A. Think
B. Evaluate
C. Anticipate
D. Increase
Answer: Option A

68. CONNOISSEUR
A. Ignorant
B. Lover of art
C. Interpreter
D. Delinquent
Answer: Option B

69. SHIVER
A. Feel
B. Rock
C. Tremble
D. Move
Answer: Option C

70. PRESTIGE
A. Influence
B. Quality
C. Name
D. Wealth

Answer: Option C

71. STRINGENT
A. Tense
B. Stringly
C. Strict
D. Causing to Shrink
Answer: Option C

72. INSOMNIA
A. Lethargy
B. Sleeplessness
C. Drunkenness
D. Unconsciousness
Answer: Option B

73. LAUD
A. Lord
B. Eulogy
C. Praise
D. Extolled
Answer: Option C

74. REPERCUSSION
A. Clever reply
B. Recollection
C. Remuneration
D. Reaction
Answer: Option D

75. IMPROMPTU
A. Offhand
B. Unimportant
C. Unreal
D. Effective
Answer: Option A

76. FRUGALITY
A. Foolishness
B. Extremity
C. Enthusiasm
D. Economy
Answer: Option D

77. CORRESPONDENCE
A. Agreements
B. Contracts
C. Documents
D. Letters
Answer: Option D

78. ASCEND
A. Leap
B. Grow
C. Deviate
D. Mount
Answer: Option D

79. FURORE
A. Excitement
B. Worry
C. Flux
D. Anteroom
Answer: Option A

80. SYNOPSIS
A. Index
B. Mixture
C. Summary
D. Puzzles
Answer: Option C

81. TURN UP
A. Land up

B. Show up

C. Crop up

D. Come up

Answer: Option B

82. VIGOUR

A. Strength

B. Boldness

C. Warmth

D. Enthusiasm

Answer: Option A

83. GARNISH

A. Paint

B. Garner

C. Adorn

D. Abuse

Answer: Option C

84. MENDACIOUS

A. Full of Confidence

B. False

C. Encouraging

D. Provocative

Answer: Option B

85. GARRULITY

A. Credulity

B. Senility

C. Loquaciousness

D. Speciousness

Answer: Option C

86. MOROSE

A. Annoyed

B.

Gloomy

C.

Moody

D.

Displeased

Answer: Option B

87. VORACIOUS

A. Truthful

B. Gluttonous

C. Funny

D. Venturous

Answer: Option B

88. AWAKENED

A. Enlightened

B. Realised

C. Shook

D. Waken

Answer: Option D

89. GRATIFY

A. Appreciate

B. Frank

C. Indulge

D. Pacify

Answer: Option C

90. PRECARIOUS

A. Cautious

B. Critical

C. Perilous

D. Brittle

Answer: Option C

91. INFAMY

A. Dishonor

B. Glory

C. Integrity
D. Reputation
Answer: Option A

92. MASTERLY
A. Crafty
B. Skilful
C. Meaningful
D. Cruel
Answer: Option B

93. SCINTILLATING
A. Smouldering
B. Glittering
C. Touching
D. Warming
Answer: Option B

94. TEPID
A. Hot
B. Warm
C. Cold
D. Boiling
Answer: Option B

95. VORACIOUS
A. Wild
B. Greedy
C. Angry
D. Quick
Answer: Option B
Explanation:
If you describe a person, or their appetite
for something, as voracious, you mean that
they want a lot of something.

96. UNITE

A. Unfold
B. Unchain
C. Combine
D. Unhinge
Answer: Option C

97. COMBAT
A. Conflict
B. Quarrel
C. Feud
D. Fight
Answer: Option D

98. REFECTORY
A. Restaurant
B. Parlour
C. Living Room
D. Dining Room
Answer: Option D
Explanation:
A refectory is a large room in a school,
university, or other institution, where meals
are served and eaten.

99. UNCOUTH
A. Ungraceful
B. Rough
C. Slovenly
D. Dirty
Answer: Option B
Explanation:
No answer description available for this
question. Let us discuss.

100. ERROR
A. Misadventure
B. Misgiving

C. Ambiguity

D. Blunder

Answer: Option D

Explanation:

No answer description available for this question. Let us discuss.

101. COMMENSURATE

A. Measurable

B. Proportionate

C. Beginning

D. Appropriate

Answer: Option B

102. DEBACLE

A. Collapse

B. Decline

C. Defeat

D. Disgrace

Answer: Option A

103. GERMANE

A. Responsible

B. Logical

C. Possible

D. Relevant

Answer: Option D

Explanation:

GERMANE - Relevant to a subject under consideration.

104. DISTINCTION

A. Diffusion

B. Disagreement

C. Different

D. Degree

Answer: Option C

Session-2

1. It is very difficult to **retain** all that you hear in the class.

A. keep

B. recall

C. preserve

D. conserve

Answer: Option A

2. The great artist life was full of **vicissitudes**.

A. sorrows

B. misfortunes

C. changes

D. surprises

Answer: Option C

3. She has an **insatiable** love for music.

A. unsatisfiable

B. unchanging

C. irreconcilable

D. undesirable

Answer: Option A

4. The great dancer impressed the appreciative crowd by his **nimble** movements.

A. Unrhythmic

B. lively

C. quickening

D. clear

Answer: Option C

5. The visitor had a **bohemian** look.

A. hostile

B. unconventional

C. sinister

D. unfriendly

Answer: Option B

6. The bullet wound proved to be **fatal** and the soldier died immediately.

A. grievous

B. dangerous

C. serious

D. deadly

Answer: Option D

7. The attitude of Western countries towards the Third World Countries is rather **callous** to say the least.

A. passive

B. unkind

C. cursed

D. unfeeling

Answer: Option D

8. In spite of their efforts, the team of scientists could not make much **headway** to solve the problem.

A. progress

B. thinking

C. efforts

D. start

Answer: Option A

9. On scrutiny the police officer found out that the documents provided by the landlord were totally **fabricated**.

A. forged

B. historical

C. prepared

D. genuine

Answer: Option A

10. Lack of occupation is not necessary revealed by **manifest** idleness.

A. easily perceived

B. easily acquired

C. easily infected

D. easily deflected

Answer: Option A

11. The accident occurred due to his **lapse**.

A. trick

B. interval

C. error

D. ignorance

Answer: Option C

12. Sunlight and shadow made the landscape a **kaleidoscope** of colour.

A. tube containing mirrors and loose pieces of coloured glass

B. frequently changing pattern of bright scenes

C. a mixture of black and white

D. resembling the seven colours of rainbow

Answer: Option B

13. After the **dismal** performance of the team in the series concluded yesterday, the captain offered his resignation to the president of the club.

A. poor

B. sorrowful

C. minimum

D. short

Answer: Option A

14. We didn't believe in his statement, but **subsequent** events proved that he was right.
A. later
B. many
C. few
D. earlier
Answer: Option A

15. The pioneers left a blazing trial of courage, manliness and chivalry.
A. inventors
B. explorers
C. colonialist
D. settlers
Answer: Option D

16. He has a **propensity** for getting into debt.
A. natural tendency
B. aptitude
C. characteristic
D. quality
Answer: Option A

17. That young is quite **sanguine** about the result of his competitive examination.
A. depressed
B. pessimistic
C. anxious
D. optimistic
Answer: Option D

18. He is **averse to** the idea of holding elections now.
A. convinced
B. angry

C. agreeable
D. opposed
Answer: Option D

19. The thief **outwitted** the constable on some pretext and disappeared on the way to the police station.
A. defeated
B. be fooled
C. cheated
D. outmaneuvered
Answer: Option A

20. Silence is **mandatory** for meditation to be effective.
A. compulsory
B. necessary
C. required
D. needed
Answer: Option A

21. We should always try to maintain and promote communal **amity**.
A. bondage
B. contention
C. friendship
D. understanding
Answer: Option C

22. The soldier displayed **exceptional** courage and saved Major from the enemy's hand.
A. avoidable
B. unusual
C. strange
D. abnormal
Answer: Option B

23. Public figures should not indulge in **mud-slinging**.
A. caricatures
B. mockery
C. slander
D. quarrelling
Answer: Option C

24. The notice said that the meeting would begin **precisely** at 9.30 AM.
A. approximately
B. exactly
C. accurately
D. concisely
Answer: Option B

25. That the plan is both inhuman and **preposterous** needs no further proof.
A. heartless
B. impractical
C. absurd
D. abnormal
Answer: Option C

26. The prisoner has been **languishing** in the jail for the last many years.
A. convicted
B. suffering
C. attempting
D. avoiding
Answer: Option B

27. As the driver was **inebriated** he could not control the car.
A. inexperienced
B. tired

C. befuddled
D. intoxicated
Answer: Option D

28. When the police questioned him, he gave very **incoherent** answer at first.
A. irrational
B. inconsistent
C. irrelevant
D. irritating
Answer: Option B

29. Even today many people are guided by **abstruse** moral values.
A. dangerous
B. impracticable
C. obscure
D. irrational
Answer: Option C

30. Instead of putting up a united front against on common enemy, the medieval states frittered away their energy in **internecine** warfare.
A. mutually destructive
B. baneful
C. pernicious
D. detrimental
Answer: Option A

31. Few teachers have been spared the problem of an **obstreperous** pupil in the class.
A. sullen
B. unruly
C. lazy
D. awkward

Answer: Option B

32. The story is too fantastic to be **credible**.
A. believable
B. false
C. readable
D. praiseworthy
Answer: Option A

33. They feel that we should be fully aware of our own **environment**.
A. nationality
B. heredity
C. nature
D. surroundings
Answer: Option D

34. No one will invite her to a tea party for she is so **garrulous**.
A. talks a lot
B. giggles all the time
C. laughs a lot
D. repeats gossip
Answer: Option A

35. The **aberration** in the Indian Economy can be attributed to short-sightedness of its political masters.
A. procrastination
B. privilege
C. deviation
D. steadfastness
Answer: Option C

36. Traffic being what it is, it is **lamentable** that our roads are unable to take the load.
A. unpardonable

B. deplorable
C. inexcusable
D. terrible
Answer: Option B

37. A **rupture** in the relationship of two brothers is quite apparent.
A. break
B. damage
C. breach
D. gap
Answer: Option A

38. His visit to foreign countries **brought about** a sea-change in his outlook and his attitude to people.
A. complete change
B. partial change
C. favourable change
D. unfavourable change
Answer: Option A

39. Only those who are **gullible** take every advertisement seriously.
A. fallible
B. enthusiastic
C. unsuspecting
D. unrealistic
Answer: Option C

40. Whatever opinion he gives is **sane**
A. rational
B. obscure
C. wild
D. arrogant
Answer: Option A

41. The recent acts of **vandalism** in the country cannot be ignored.
A. disturbance
B. ravage
C. provocation
D. violence
Answer: Option D

42. It took him a long time to **come round** after the operation.
A. recover
B. walk
C. move
D. eat
Answer: Option A

43. I don't like **alien** fashions.
A. foreign
B. extraneous
C. Unusual
D. exotic
Answer: Option A

44. Catching snakes can be **hazardous** for people untrained in the art.
A. tricky
B. harmful
C. difficult
D. dangerous
Answer: Option D

45. The inspector was a **vigilant** young man.
A. intelligent
B. ambitious
C. watchful
D. smart
Answer: Option C

46. I wrote to him as **lately** as last week.
A. immediately
B. early
C. recently
D. late
Answer: Option C

47. Many species of animals have become **extinct** during the last hundred years.
A. aggressive
B. non-existent
C. scattered
D. feeble.
Answer: Option B

48. The tablet **alleviated** the pain, and the patient was soon feeling much better.
A. mitigated
B. moderated
C. removed
D. lightened
Answer: Option A

49. The International Community may begin to doubt the **credentials** of the largest democracy in the world.
A. principles
B. dependability
C. capacity to return loans
D. trustworthiness
Answer: Option D

50. They were totally unaware of the **impending** disaster.
A. threatening
B. imminent

C. terrible

D. possible

Answer: Option B

51. The general policies will **relieve** the sufferings of the common man.

A. alleviate

B. mitigate

C. moderate

D. abate

Answer: Option A

52. The underworld still makes solid profit out of **illicit** liquor.

A. indigenous

B. illegitimate

C. illegal

D. country

Answer: Option C

53. True religion does not require one to **proselytize** through guile or force.

A. translate

B. hypnotize

C. attack

D. convert

Answer: Option D

54. The small boy was able to give a **graphic description** of the thief.

A. picture

B. drawing

C. vivid

D. broad

Answer: Option C

55. " I have learnt a great deal working factories, and for a time I've never been a weaver. Here are my **testimonials**, Mr. Davis"

A. witnesses

B. testaments

C. tokens

D. credentials

Answer: Option D

56. The claims of students look **hollow** when they attribute their poor performance to difficulty of examination.

A. infer

B. impute

C. inhere

D. inundate

Answer: Option B

57. The angry villagers have **lynched** two suspected child-lifters already.

A. beaten up

B. captured

C. killed

D. mutilated

Answer: Option C

58. Some people just cannot **compromise** where truth is concerned.

A. adjust

B. accommodate

C. yield

D. conciliate

Answer: Option A

59. He listened of my request with **indifference**.

A. disinterest

B. concern

C. displeasure

D. caution

Answer: Option A

60. The soldier provided his **mettle** in the battlefield.

A. persistence

B. stamina and strength

C. courage and endurance

D. heroism

Answer: Option C

61. Japan has been very much **eulogized** in this book.

A. appreciated

B. praised

C. approved

D. applauded

Answer: Option B

62. The time I spent in the library was a most **rewarding** one.

A. profitable

B. paying

C. serviceable

D. precious

Answer: Option A

63. The **benevolence** of the God of Rain has seen a very successful monsoon this year too

A. ill-will

B. kindness

C. morbidity

D. vision

Answer: Option B

64. Whatever the **verdict** of history may be, Chaplin will occupy a unique place in its pages.

A. judgment

B. voice

C. outcome

D. prediction

Answer: Option A

65. Even though singing of ballads is no longer **lucrative** the Bhopas of Rajasthan continue to sing them in order to cherish the memory of their royal warriors.

A. tempting

B. attractive

C. profitable

D. honourable

Answer: Option C

66. **Incensed** by his rude behaviour, the manager suspended the worker.

A. excited

B. inflamed

C. enraged

D. enthused

Answer: Option C

67. The poem is written in a very **lucid** style.

A. elaborate

B. clear

C. noble

D. intricate

Answer: Option B

68. The base of an Indian Politicians is the group of **sycophants** around them who earn bad name for their leaders.
A. submissive
B. foppish
C. flatterers
D. jarnor
Answer: Option C

69. He was wanted at the **outset** of his career.
A. end
B. beginning
C. middle
D. entrance
Answer: Option B

70. When youngsters do not have good role-model to **emulate** they start searching for them amongst Sportsmen of Film stars.
A. imitate
B. modify
C. mollify
D. inhabit
Answer: Option A

71. The novel was so interesting that I was **oblivious** of my surroundings.
A. precarious
B. unmindful
C. aware
D. watchful
Answer: Option B

72. All the characters in this novel are **fictitious**.
A. unbelievable

B. unreliable
C. infamous
D. unreal
Answer: Option D

73. Everyone was listening to the news of earthquake with mounting **anxiety**.
A. curiosity
B. grief
C. uneasiness
D. eagerness
Answer: Option C

74. He **corroborated** the statement of his brother.
A. confirmed
B. disproved
C. condemned
D. seconded
Answer: Option A

75. The prince fell in love with a **comely** young maiden.
A. delightful
B. pretty
C. homely
D. elegant
Answer: Option B

76. When I look back over there wartime years I cannot help feeling that time is an inadequate and even **capricious** measure of their duration at one moment they seem so long, at another so short.
A. misleading
B. whimsical
C. erratic

D. unpredictable

Answer: Option B

77. Manish **neglected** to remit the fees in time and therefore had to pay a fine.

A. refused

B. failed

C. promised

D. obstructed

Answer: Option B

78. Some of the Asian countries have been **enmeshed** in an inescapable debt trap.

A. entangled

B. hit

C. struck

D. ensured

Answer: Option A

79. She **baffled** all our attempts to find her.

A. defeated

B. thwarted

C. foiled

D. circumvented

Answer: Option C

80. It is a **scandal** that the murderer was declared innocent.

A. silly notion

B. talk

C. rumour

D. disgraceful action

Answer: Option D

81. Everybody likes him because he is an **industrious** student.

A. energetic

B. prompt

C. excellent

D. diligent

Answer: Option D

82. The young man appears to be quite **headstrong**.

A. thick-headed

B. obstinate

C. robust

D. witty

Answer: Option B

83. As soon as he finished his speech, there was **spontaneous** applause from the audience.

A. well-timed

B. willing

C. instinctive

D. instantaneous

Answer: Option C

84. The president of the party **deprecated** the move of the Government to introduce electoral reforms in haste.

A. welcomed

B. denied

C. protested

D. humiliated

Answer: Option C

85. He found a **lucrative** assignment.

A. good

B. profitable

C. excellent

D. significant

Answer: Option B

86. A person unrestrained by the rules of morality or tradition is called a **licentious** person.
A. libertine
B. loafer-type
C. criminal
D. freelance
Answer: Option A

87. The leader nodded his **approbation**.
A. understanding
B. approval
C. admiration
D. appreciation
Answer: Option B

88. When he returned he was accompanied by a **sprightly** young girl.
A. beautiful
B. lively
C. intelligent
D. sportive
Answer: Option B

89. Being a member of this club, he has certain **rights**.
A. status
B. truth
C. virtues
D. privileges
Answer: Option D

90. When he could not **endure** the cruel ragging any longer, the new recruit bravely stood up to all his bullying seniors.
A. challenged
B. fought back
C. resisted
D. defeated
Answer: Option C

91. His style is quite **transparent**.
A. verbose
B. involved
C. lucid
D. witty
Answer: Option C

92. The invasion force had no artillery and was completely **annihilated**.
A. dismembered
B. reduced
C. destroyed
D. split
Answer: Option C

93. The courage shown by the soldiers at this moment of crisis is **exemplary**.
A. suitable
B. clear
C. elementary
D. admirable
Answer: Option D

94. Swift is known in the world of letters for his **misogynism**.
A. hate for mankind
B. hate for womankind
C. love for the reasonable
D. love for the womankind
Answer: Option B

95. The **indiscriminate** demand for mass consumption goods is deplorable.

A. desperate

B. undifferentiated

C. discreet

D. insensitive

Answer: Option B

Grammatical Error

Read the each sentence to find out whether there is any grammatical error in it. The error, if any will be in one part of the sentence. The letter of that part is the answer. If there is no error, the answer is 'D'. (Ignore the errors of punctuation, if any).

1. (solve as per the direction given above)

A. We discussed about the problem so thoroughly

B. on the eve of the examination

C. that I found it very easy to work it out.

D. No error.

Answer: Option A

Explanation:

We discussed the problem so thoroughly

2. (solve as per the direction given above)

A. An Indian ship

B. laden with merchandise

C. got drowned in the Pacific Ocean.

D. No error.

Answer: Option C

Explanation:

sank in the Pacific Ocean

3. (solve as per the direction given above)

A. I could not put up in a hotel

B. because the boarding and lodging charges

C. were exorbitant.

D. No error.

Answer: Option A

Explanation:

'I could not put up at a hotel'

4. (solve as per the direction given above)

A. The Indian radio

B. which was previously controlled by the British rulers

C. is free now from the narrow vested interests.

D. No error.

Answer: Option C

Explanation:

is now free from the narrow vested interests.

5. (solve as per the direction given above)

A. If I had known

B. this yesterday

C. I will have helped him.

D. No error.

Answer: Option C

Explanation:

I would have helped him

6. (solve as per the direction given above)

A. A lot of travel delay is caused

B. due to the inefficiency and lack of good management

C. on behalf of the railways.

D. No error.

Answer: Option C

Explanation:

on the part of the railways

7. (solve as per the direction given above)

A. One of the members

B. expressed doubt if

C. the Minister was an atheist.

D. No error.

Answer: Option B

Explanation:

expressed doubt that

8. (solve as per the direction given above)

A. I have got

B. my M.SC. degree

C. in 1988.

D. No error.

Answer: Option A

Explanation:

I got

9. (solve as per the direction given above)

A. Having received your letter

B. this morning, we are writing

C. to thank you for the same.

D. No error.

Answer: Option D

10. (solve as per the direction given above)

A. If you lend him a book

B. he will lend it to some one else

C. and never you will get it back.

D. No error.

Answer: Option C

Explanation:

and you will never get it back

11. (solve as per the direction given above)

A. According to the Bible

B. it is meek and humble

C. who shall inherit the earth.

D. No error.

Answer: Option B

Explanation:

it is the meek and the humble

12. (solve as per the direction given above)

A. Do the roses in your garden smell

B. more sweetly

C. than those in ours?

D. No error.

Answer: Option B

Explanation:

sweeter

13. (solve as per the direction given above)

A. Block of Residential flats

B. are coming up

C. near our house.

D. No error

Answer: Option A

Explanation:

Blocks of Residential flats

14. (solve as per the direction given above)

A. You can get

B. all the information that you want

C. in this book.

D. No error.

Answer: Option B

Explanation:

all the information you want

15. (solve as per the direction given above)

A. The students were

B. awaiting for

C. the arrival of the chief guest.

D. No error.

Answer: Option B

16. (solve as per the direction given above)

A. Sixty miles

B. are

C. a good distance.

D. No error.

Answer: Option B

Explanation:

Sixty miles is a good distance.

17. (solve as per the direction given above)
A. They have been
B. very close friends
C. until they quarrelleD.
D. No error.
Answer: Option A
Explanation:
'They had been'

18. (solve as per the direction given above)
A. When the dentist came in
B. my tooth was stopped aching
C. out of fear that I might lose my tooth.
D. No error.
Answer: Option B
Explanation:
my tooth stopped aching

19. (solve as per the direction given above)
A. It is the duty of every citizen to do his utmost
B. to defend the hardly-won
C. freedom of the country.
D. No error.
Answer: Option B
Explanation:
to defend the hard-won

20. (solve as per the direction given above)
A. No sooner did I open the door
B. when the rain, heavy and stormy, rushed in
C. making us shiver from head to foot
D. No error.
Answer: Option B
Explanation:
than the rain, heavy and stormy, rushed in

21. (solve as per the direction given above)
A. If a man diligently seeks to come into the contact

B. with the best that has been thought and said in this world
C. he will become simple and unselfish.
D. No error.
Answer: Option A
Explanation:
If a man diligently seeks to come into contact

22. (solve as per the direction given above)
A. You must
B. remember me
C. to post this letter.
D. No error.
Answer: Option B
Explanation:
remind me

23. (solve as per the direction given above)
A. I shall certainly
B. write you
C. when I shall reach NewDelhi.
D. No error.
Answer: Option C
Explanation:
when I reach New Delhi

24. (solve as per the direction given above)
A. On the busy Ring Road
B. we witnessed a collusion
C. between a truck and an auto.
D. No error.
Answer: Option B
Explanation:
we witnessed a collision

25. (solve as per the direction given above)
A. Mr.Praful Patel
B. is not attending his office
C. for the last one month.
D. No error.

Answer: Option B

Explanation:

has not been attending his office

26. (solve as per the direction given above)

A. He couldn't but help

B. shedding tears at the plight of the villagers

C. rendered homeless by a devastating cyclone.

D. No error.

Answer: Option A

Explanation:

He couldn't help

27. (solve as per the direction given above)

A. He will certainly help you

B. if you will ask him

C. in a pleasant manner.

D. No error.

Answer: Option B

Explanation:

if you ask him

28. (solve as per the direction given above)

A. The brand proposition now therefore had to be that Keokarpin Antiseptic Cream is more effective

B. because it penetrates deep down (being light and non-sticky) and works from within

C. (because of its ayurvedic ingredients) to keep skin blemish, free and helps cope with cuts nicks, burns and nappy rash.

D. No error

Answer: Option A

Explanation:

The brand proposition now therefore is

29. (solve as per the direction given above)

A. Will you please buy

B. some jaggery for me

C. if you go to the market?

D. No error.

Answer: Option D

30. (solve as per the direction given above)

A. Most of the members at the meeting felt

B. that the group appointed for investigating the case

C. were not competent to do the job efficiently.

D. No error.

Answer: Option C

Explanation:

was not competent to do the job efficiently

31. (solve as per the direction given above)

A. In these days of inflation

B. a ten rupee's note will not buy you

C. even an ordinary meal.

D. No error.

Answer: Option B

Explanation:

a ten rupee note will not buy you

32. (solve as per the direction given above)

A. He persisted

B. to do it

C. in spite of my advice

D. No error.

Answer: Option B

Explanation:

in doing it

33. (solve as per the direction given above)

A. The long-awaited moment at last came,

B. and we set out for the station

C. as merry a band of children as I have ever seen before or since.

D. No error.

Answer: Option C

Explanation:

as merry a band of children as I have ever seen since or before

34. (solve as per the direction given above)

A. Our conception of

B. what should a science of mental life be

C. has changed considerably since James' time.

D. No error.

Answer: Option B

Explanation:

what a science of mental life should be

35. (solve as per the direction given above)

A. He is not coming tomorrow

B. as he is having a pain in the chest

C. and has to see a doctor.

D. No error.

Answer: Option C

Explanation:

'and he has to see a doctor'

36. (solve as per the direction given above)

A. Many times the news has been published

B. in the papers that the end of the world will be certain

C. if a nuclear war breaks out.

D. No error.

Answer: Option D

37. (solve as per the direction given above)

A. The reason Ram

B. is absent from his duty

C. is because he is unwell.

D. No error.

Answer: Option A

Explanation:

The reason why Ram

38. (solve as per the direction given above)

A. Azharuddin is one of the finest batsmen

B. that India have produced

C. over the decades.

D. No error.

Answer: Option B

Explanation:

that India has produced

39. (solve as per the direction given above)

A. The thief broke in the

B. house at the

C. dead of night

D. No error.

Answer: Option A

Explanation:

The thief broke into the

40. (solve as per the direction given above)

A. May I

B. know who you want

C. to see please

D. No error.

Answer: Option B

Explanation:

know whom you want

41. (solve as per the direction given above)

A. He said that he

B. will mind if

C. I refused his offer.

D. No error.

Answer: Option B

Explanation:

would mind if

42. (solve as per the direction given above)

A. Arun's parents died when he was young and

B. he looked after his aunt

C. who had no children.

D. No error.

Answer: Option B

Explanation:

he was looked after by his aunt

43. (solve as per the direction given above)

A. Though child marriage

B. has been banneD.

C. the custom still prevailed among some groups in IndiA.

D. No error.

Answer: Option C

Explanation:

The custom still prevails among some groups in India

44. (solve as per the direction given above)

A. My papa is

B. in bad mood

C. today

D. No error.

Answer: Option B

Explanation:

in a bad mood

45. (solve as per the direction given above)

A. The warden

B. forbade the student

C. from leaving the hostel.

D. No error.

Answer: Option D

46. (solve as per the direction given above)

A. In spite of several reminders,

B. he did not so far send

C. any reply to me, letters.

D. No error.

Answer: Option B

Explanation:

he has not so far sent

47. (solve as per the direction given above)

A. As much as I admire him for his sterling qualities.

B. I cannot excuse him for

C. being unfair to his friends.

D. No error.

Answer: Option A

Explanation:

Much as I admire him for his sterling qualities.

48. (solve as per the direction given above)

A. Please try to understand

B. that the dispute on this issue is between my brother and myself,

C. and concerns nobody else.

D. No error.

Answer: Option B

Explanation:

that the dispute on this issue is between my brother and me

49. (solve as per the direction given above)

A. All the furnitures have been

B. sent to the new house

C. located in a village.

D. No error.

Answer: Option A

Explanation:

All the furniture have been

50. (solve as per the direction given above)

A. It does not matter how you do it;

B. what I want is that

C. you should finish the work within a month.

D. No error.

Answer: Option B

Explanation:

I want that

51. (solve as per the direction given above)

A. Though senior in age,

B. his father is junior than

C. my father in service.

D. No error.

Answer: Option B

Explanation:

his father is junior to

52. (solve as per the direction given above)

A. While walking slowly in the park

B. on a quiet summer afternoon

C. a mad dog suddenly attacked him from behind

D. No error.

Answer: Option A

Explanation:

While he was walking slowly in the park

53. (solve as per the direction given above)

A. Everyone visiting the house asked the young girl

B. how could she kill the wolf

C. single handed and without a weapon.

D. No error.

Answer: Option B

Explanation:

'how she could kill the wolf'

54. (solve as per the direction given above)

A. Many health-conscious people

B. prefer margarine

C. than butter.

D. No error.

Answer: Option C

Explanation:

to butter

55. (solve as per the direction given above)

A. The retiring principal asked his old pupils

B. to take the interest in the school

C. after he has retireD.

D. No error.

Answer: Option B

Explanation:

to take interest in his school

56. (solve as per the direction given above)

A. At present juncture

B. however, the supercomputer

C. would be a costly toy.

D. No error.

Answer: Option A

Explanation:

At the present juncture

57. (solve as per the direction given above)

A. The crews were on board,

B. and they soon busied themselves

C. in preparing to meet the storm.

D. No error.

Answer: Option C

Explanation:

in preparing to face the storm

58. (solve as per the direction given above)

A. Troy was taken by Greeks

B. this formed the basis of a story

C. which has become famous.

D. No error.

Answer: Option A

Explanation:

Troy was taken by the Greeks

59. (solve as per the direction given above)

A. I am much pleased

B. to know that

C. you have topped the list.

D. No error.

Answer: Option A

Explanation:

I am very pleased

60. (solve as per the direction given above)

A. He has not been attending

B. English classes

C. since one month

D. No error.

Answer: Option C

Explanation:

since the last one month

61. (solve as per the direction given above)

A. It is time

B. we should accept all our people as equals

C. and as partners in the task of building a strong and united nation.

D. No error.

Answer: Option B

Explanation:

we should accept all our people as equal

62. (solve as per the direction given above)

A. Twice twelve

B. makes

C. twenty-four

D. No error.

Answer: Option B

Explanation:

make

63. (solve as per the direction given above)

A. Regretfully, profits earned by your company

B. fell by 20 per cent last year

C. despite higher sales.

D. No error.

Answer: Option A

Explanation:

Regrettably, profits earned by your company

64. (solve as per the direction given above)

A. In a report issued by Indian Statistical Institute,

B. the Iron and Steel Industry is investing more than any other

C. Indian industry in fighting pollution.

D. No error.

Answer: Option C

Explanation:

Indian industry on fighting pollution

65. (solve as per the direction given above)

A. He is going everyday

B. for a morning walk

C. with his friends and neighbours

D. No error.

Answer: Option A

Explanation:

He goes everyday

66. (solve as per the direction given above)

A. My father goes

B. to the office

C. five day week.

D. No error.

Answer: Option C

Explanation:

five days a week

67. (solve as per the direction given above)

A. If she will be promoted

B. she will get

C. a higher salary.

D. No error.

Answer: Option A

Explanation:

If she is promoted

68. (solve as per the direction given above)

A. If I were him,

B. I would have taught

C. those cheats a lesson.

D. No error.

Answer: Option A

Explanation:

If I were he, I would have taught those cheats a lesson.

69. (solve as per the direction given above)

A. Looking back, I find that among the many impressions ofthe people of India,

B. absorbed while I lived among them,

C. are their reverence for great men and women.

D. No error.

Answer: Option A

Explanation:

I find that among the many impressions I got of the people of India

70. (solve as per the direction given above)

A. If you work hard,

B. you will get good grades

C. in examinations.

D. No error

Answer: Option C

Explanation:

in the examination

71. (solve as per the direction given above)

A. He managed to make sense of the book

B. even though it was the first time

C. he read anything on the subject.

D. No error.

Answer: Option C

Explanation:

when he read anything on the subject

72. (solve as per the direction given above)

A. She reluctantly said that

B. if nobody else was doing it

C. she will do it.

D. No error.

Answer: Option C

Explanation:

she would do it

73. (solve as per the direction given above)

A. I fail to understand

B. why he replied in negative

C. when the proposal was in his favour.

D. No error.

Answer: Option A

Explanation:

I failed to understand

74. (solve as per the direction given above)

A. I have

B. an appointment

C. on the 9th September on five o'clock

D. No error.

Answer: Option C

Explanation:

on the 9th September at five o'clock

75. (solve as per the direction given above)

A. They

B. enjoyed thoroughly

C. at the party.

D. No error.

Answer: Option B

Explanation:

thoroughly enjoyed themselves

76. (solve as per the direction given above)

A. The method suggested in the lecture

B. enables a student to learn more quickly

C. and to have remembered for a longer period of time.

D. No error.

Answer: Option C

Explanation:

and to remember for a longer period of time

77. (solve as per the direction given above)

A. My friend asked me

B. if I can lend him my Parker pen

C. for a few days.

D. No error.

Answer: Option B

Explanation:

If I could lend him my Parker pen

78. (solve as per the direction given above)

A. The test will not need

B. more than one and half hour

C. to finish.

D. No error

Answer: Option B

Explanation:

more than one and a half hour

79. (solve as per the direction given above)

A. The school is

B. within hundred yards

C. from the church.

D. No error.

Answer: Option B

Explanation:

within a hundred yards

80. (solve as per the direction given above)

A. His father died of cholera

B. but his mother also,

C. though very weak, is out of danger.

D. No error.

Answer: Option B

Explanation:

but his mother

81. (solve as per the direction given above)

A. The police broke upon the robbers

B. when they were in the lonely place

C. to divide their booty.

D. No error.

Answer: Option A

Explanation:

The police came upon the robbers

82. (solve as per the direction given above)

A. Since it was his first election campaign, the candidate was confused;

B. none could clearly understand

C. either the principles he stood for or the benefits he promiseD.

D. No error.

Answer: Option D

83. (solve as per the direction given above)

A. Jayesh is getting

B. fatter because he

C. does not take exercise at all

D. No error.

Answer: Option B

Explanation:

fat because he

84. (solve as per the direction given above)

A. He loved

B. none but

C. his neighbour's daughter.

D. No error.

Answer: Option D

85. (solve as per the direction given above)

A. The criminal was

B. caught, convicted the hung

C. in a short period of time.

D. No error.

Answer: Option C

Explanation:

within a short period of time

86. (solve as per the direction given above)

A. I am thinking of

B. to go to Agra

C. for my cousin's marriage.

D. No error.

Answer: Option B

Explanation:

going to Agra

87. (solve as per the direction given above)

A. In management, as you rise higher,

B. the problems you face become more and more unstructured and you can't just fall back on

C. the tools you had been

D. No error.

Answer: Option B

Explanation:

the problem you face become more and more unstructured and you can't afford to fall back upon

88. (solve as per the direction given above)

A. Neeraj said

B. that he would rather fail than copying

C. in the examination

D. No error.

Answer: Option B

Explanation:

he would rather fail than copy

89. (solve as per the direction given above)

A. I had hoped to have met him yesterday

B. to discuss the matter with him

C. but he was not in his house, and so I could not meet him.

D. No error.

Answer: Option A

Explanation:

I had hoped to meet him yesterday

90. (solve as per the direction given above)

A. You will come

B. to my party tomorrow,

C. isn't it?

D. No error.

Answer: Option C

Explanation:

won't you

91. (solve as per the direction given above)

A. I wonder

B. how am I

C. to do it

D. No error.

Answer: Option B

Explanation:

how I am going

92. (solve as per the direction given above)

A. He is not to blame

B. for what has happened

C. for he is in no way connected with it.

D. No error.

Answer: Option A

Explanation:

He is not to be blamed

93. (solve as per the direction given above)

A. Had you not

B. reached in time

C. he would have lost all our belongings.

D. No error.

Answer: Option C

Explanation:

we would have lost all our belongings

94. (solve as per the direction given above)

A. The man told to her

B. that he had not brought his dog

C. out for a walk as he was afraid that it would rain.

D. No error.

Answer: Option A

Explanation:

The man told her

95. (solve as per the direction given above)

A. If I am you

B. I would have seen to it

C. that I won the prize.

D. No error.

Answer: Option A

Explanation:

If I were you

96. (solve as per the direction given above)

A. It is unfortunate that

B. many youngsters get

C. addicted to gamble.

D. No error.

Answer: Option C

Explanation:

addicted to gambling

97. (solve as per the direction given above)

A. Kamala's fountain-pen

B. is as expensive

C. as Shyama.

D. No error.

Answer: Option C

Explanation:

as Shyama's

98. (solve as per the direction given above)

A. When we consider all the factors, which are many,

B. the number of school dropouts

C. are quite disturbing.

D. No error.

Answer: Option C

Explanation:

is quite disturbing

99. (solve as per the direction given above)

A. She has never

B. approve of him

C. working as a clerk.

D. No error.

Answer: Option B

Explanation:

approved of his

100. (solve as per the direction given above)

A. At the station,

B. I'll hire a coolie

C. to carry my baggages

D. No error.

Answer: Option C

Explanation:

to carry my baggage

101. (solve as per the direction given above)

A. The number of marks carried by each question

B. are indicated

C. at the end of the question

D. No error.

Answer: Option B

Explanation:

is indicated

102. (solve as per the direction given above)

A. There is no question

B. of my failing

C. in the examination.

D. No error.

Answer: Option B

Explanation:

of me failing

103. (solve as per the direction given above)

A. She is

B. no longer popular as she has

C. a friends

D. No error.

Answer: Option C

Explanation:

few friends

104. (solve as per the direction given above)

A. It is necessary

B. that everybody

C. must have a house.

D. No error.

Answer: Option C

Explanation:

should have a house

105. (solve as per the direction given above)

A. Students should not take part

B. in party politics and political demonstrations

C. as they interfere in serious study

D. No error.

Answer: Option C

Explanation:

'as they interfere with serious study'

106. (solve as per the direction given above)

A. To facilitate exports and improve sales in the domestic market

B. some of the improvised fabrics and garments fabricated out from them

C. are displayed in the main pavilion.

D. No error.

Answer: Option B

Explanation:

some of the improvised fabrics and garments made from them

107. (solve as per the direction given above)

A. Both of you two

B. can come with me

C. to the play tonight

D. No error.

Answer: Option A

Explanation:

Both of you

108. (solve as per the direction given above)

A. No sooner did the sun rise

B. when we took a hasty breakfast

C. and resumed the journey.

D. No error.

Answer: Option B

Explanation:

than we took a hasty breakfast

109. (solve as per the direction given above)

A. The charges in this hospital

B. are less than

C. the hospital near my house.

D. No error

Answer: Option C

Explanation:

those in the hospital near my house

110. (solve as per the direction given above)

A. The brakes and steering failed

B. and the bus ran down the hill

C. without anyone being able control it.

D. No error.

Answer: Option C

Explanation:

without being controlled by anyone

111. (solve as per the direction given above)

A. The tall three girls

B. had left

C. the day before.

D. No error.

Answer: Option A

Explanation:

The three tall girls

112. (solve as per the direction given above)

A. When he was asked what is wrong with him.

B. he said that he was not well.

C. and asked for leave of absence for one day.

D. No error.

Answer: Option A

Explanation:

When he was asked what was wrong with him.

113. (solve as per the direction given above)
A. Wherever they go
B. Indians easily adapt to
C. local circumstances.
D. No error.
Answer: Option B
Explanation:
Indians easily adapt themselves to

114. (solve as per the direction given above)
A. Remember that you are part of
B. the team and your success depends on the support
C. you are able to give and get from your other team members.
D. No error.
Answer: Option A
Explanation:
Remember that you are a part of

115. (solve as per the direction given above)
A. It is an established fact that the transcendental American poets and philosophers.
B. who lived in the latter half of the nineteenth century.
C. were more influenced by Indian philosophy, in particular by Upanishadic Philosophy.
D. No error.
Answer: Option C
Explanation:
Were much influenced by Indian Philosophy in particular by Upanishadic Philosophy.

116. (solve as per the direction given above)
A. That house

B. is costing me
C. ten thousand rupees
D. No error.
Answer: Option B
Explanation:
'will cost me' or 'costs me'

117. (solve as per the direction given above)
A. Firstly you should
B. think over the meaning of the words
C. and then use them.
D. No error.
Answer: Option A
Explanation:
'First you should'

118. (solve as per the direction given above)
A. It is true
B. that God helps those
C. who helps themselves.
D. No error.
Answer: Option C
Explanation:
who help themselves

119. (solve as per the direction given above)
A. Happily, zoos were
B. unwilling to cooperate
C. in a scheme that was potentially harmful to animal welfare
D. No error.
Answer: Option C
Explanation:
on a scheme that was potentially harmful to animal welfare

120. (solve as per the direction given above)
A. Neither he
B. nor his father is interested
C. in joining the party.
D. No error.

Answer: Option D

121. (solve as per the direction given above)

A. With little patience

B. you will be able to

C. cross this hurdle

D. No error.

Answer: Option A

Explanation:

with a little patience

122. (solve as per the direction given above)

A. She was told

B. to give the award to whosoever

C. she thought has done the most for the downtrodden.

D. No error.

Answer: Option C

Explanation:

she thought had done the most for the downtrodden

123. (solve as per the direction given above)

A. At the end of the year

B. every student who had done adequate work

C. was automatically promoteD.

D. No error.

Answer: Option D

124. (solve as per the direction given above)

A. The reason why

B. he was rejected

C. was because he was too young.

D. No error.

Answer: Option C

Explanation:

'was that he was too young'

125. (solve as per the direction given above)

A. Since we are friends

B. there should be no secret

C. between you and I.

D. No error.

Answer: Option C

Explanation:

between you and me

126. (solve as per the direction given above)

A. Since the attachment of air-conditioned sleeping cars to all important trains,

B. travelling became very pleasant,

C. especially during the summer season.

D. No error.

Answer: Option B

Explanation:

travelling has become very pleasant

127. (solve as per the direction given above)

A. If I will have the time

B. I shall try and make it

C. to the zoo this afternoon.

D. No error.

Answer: Option A

Explanation:

If I have the time

128. (solve as per the direction given above)

A. We are four brothers and sisters living in this house

B. but neither of us is

C. satisfied with it.

D. No error.

Answer: Option B

Explanation:

but none of us are

129. (solve as per the direction given above)

A. A leading textile manufacturer, one of the fastest growing in the industry.

B. is looking for a marketing manager

C. to look up the marketing network of the company

D. No error.

Answer: Option C

Explanation:

to look after the marketing network of the company

131. (solve as per the direction given above)

A. Not one of the hundreds

B. of striking workers.

C. were allowed to go near the factory.

D. No error.

Answer: Option C

Explanation:

was allowed to go near the factory

131. (solve as per the direction given above)

A. The single biggest gainer in this process

B. was ITC's Gold Flake Kings sales are estimated

C. to have moved up from 50 million to 200 million sticks per month during 1987 and last year.

D. No error.

Answer: Option B

Explanation:

was ITC's Gold Flake Kings sales of which are estimated' or 'whose sales are estimated

132. (solve as per the direction given above)

A. They left

B. their luggages

C. at the railway station.

D. No error.

Answer: Option B

Explanation:

their luggage

133. (solve as per the direction given above)

A. Salim and Antony are such good friends

B. that one won't go to the pictures.

C. without his coming too.

D. No error.

Answer: Option C

Explanation:

without the other's coming too

134. (solve as per the direction given above)

A. She is

B. five years

C. senior than me.

D. No error.

Answer: Option C

Explanation:

senior to me

135. (solve as per the direction given above)

A. The President had hardly spoken

B. a few words

C. when the microphone stopped functioning.

D. No error.

Answer: Option D

136. (solve as per the direction given above)

A. Locke's treatises on government toleration and education

B. show a mind fully awake in

C. the possibilities of social reconstruction.

D. No error.

Answer: Option B

Explanation:

show a mind fully alert to

137. (solve as per the direction given above)

A. You will get

B. all the information

C. if you read this booklet carefully.

D. No error.

Answer: Option A

Explanation:

you can get

138. (solve as per the direction given above)

A. None of the students attending your class

B. answered your questions

C. did they?

D. No error.

Answer: Option C

Explanation:

'did one' or 'did any'

139. (solve as per the direction given above)

A. An animal

B. can be just as unhappy in a vast area

C. or in a small one

D. No error.

Answer: Option C

Explanation:

as in a small one

140. (solve as per the direction given above)

A. He is working in

B. a bank in New Delhi

C. for the past several months.

D. No error.

Answer: Option A

Explanation:

He has been working in

141. (solve as per the direction given above)

A. The scientist must follow

B. his hunches and his data

C. wherever it may leaD.

D. No error.

Answer: Option C

Explanation:

'whenever they may lead'

142. (solve as per the direction given above)

A. Each one of the boys

B. have paid

C. the tuition-fee.

D. No error.

Answer: Option B

Explanation:

has paid

143. (solve as per the direction given above)

A. A large scale exchange of nuclear weapons

B. will produce unprecedented amounts of radiation

C. that can penetrate into the biological tissue.

D. No error.

Answer: Option C

Explanation:

that can penetrate the biological tissue

144. (solve as per the direction given above)

A. Had I

B. known it earlier

C. I would contact you.

D. No error.

Answer: Option C

Explanation:

I would have contacted you

145. (solve as per the direction given above)

A. He asked me

B. why did I call

C. him a rogue.

D. No error.

Answer: Option B

Explanation:

why I called

146. (solve as per the direction given above)

A. Were you

B. given a choice

C. or you had to do it?

D. No error.

Answer: Option A

Explanation:

Had you been

147. (solve as per the direction given above)

A. The person which was

B. recommended for the position

C. did not fulfil the prescribed qualifications.

D. No error.

Answer: Option A

Explanation:

The person who was

148. (solve as per the direction given above)

A. What does Professor Dhavan

B. spend so many hours

C. in the laboratory?

D. No error.

Answer: Option A

Explanation:

why does Professor Dhavan

149. (solve as per the direction given above)

A. The presumption that the average

investor does not understand

B. or take interest in the affairs of the

company

C. is not correct.

D. No error.

Answer: Option D

150. (solve as per the direction given above)

A. Shanghai is

B. bigger than any city

C. of the world

D. No error.

Answer: Option B

Explanation:

bigger than any other city

151. (solve as per the direction given above)

A. Sheela has scored a first class

B. in her final exams,

C. isn't it?

D. No error.

Answer: Option C

Explanation:

hasn't she

152. (solve as per the direction given above)

A. At the moment the house

B. was burgled the family

C. attended a night party in the

neighbourhooD.

D. No error.

Answer: Option A

Explanation:

The moment the house

153. (solve as per the direction given above)

A. Scarcely had

B. I arrived than

C. the train left.

D. No error.

Answer: Option B

Explanation:

'I arrived when'

154. (solve as per the direction given above)

A. Though he stoutly persisted in denying

his involvement in the case,

B. the facts made it very clear

C. that he had hand in the cruel murder of

his wife.

D. No error.

Answer: Option C

Explanation:

that he had involved in the cruel murder of

his wife.

155. (solve as per the direction given above)

A. One of my favourite actor

B. is acting

C. in this play also.

D. No error.

Answer: Option A

Explanation:

one of my favourite actors

156. (solve as per the direction given above)

A. Emphasis on equality of life ensures

B. for the health and happiness

C. of every individual.

D. No error.

Answer: Option B

Explanation:

the health and happiness

157. (solve as per the direction given above)

A. There was very heavy rain last night,

B. and the rivers have overflown their banks

C. causing severe hardship to the people living by them.

D. No error.

Answer: Option B

Explanation:

and the rivers have overflowed their banks

158. (solve as per the direction given above)

A. Every motorist knows

B. road signs---whether symbols or colour codes--- have an immediacy

C. that neither the spoken nor the written word can match.

D. No error.

Answer: Option D

159. (solve as per the direction given above)

A. Supposing if

B. there is no bus.

C. how will you get there?

D. No error.

Answer: Option A

Explanation:

if

160. (solve as per the direction given above)

A. Because of the emergency help

B. that the patient received

C. he would have died

D. No error.

Answer: Option A

Explanation:

But for emergency help

161. (solve as per the direction given above)

A. He was in such hurry

B. that he didn't

C. wait for me

D. No error.

Answer: Option A

Explanation:

He was in such a hurry

162. (solve as per the direction given above)

A. Will you be

B. at Board meeting

C. on next Wednesday?

D. No error.

Answer: Option C

Explanation:

next Wednesday

163. (solve as per the direction given above)

A. Do you know

B. to play

C. the guitar?

D. No error.

Answer: Option B

Explanation:

how to play

164. (solve as per the direction given above)

A. Few scientists changed

B. people's ideas as much as

C. Darwin with his Theory of Evolution.

D. No error.

Answer: Option A

Explanation:

Few scientists have changed

165. (solve as per the direction given above)

A. The course provide

B. not only theoretical inputs

C. but also practical training

D. No error.

Answer: Option A

Explanation:

The course provides

166. (solve as per the direction given above)

A. After the humiliating exposure

B. he hanged his head

C. in shame.

D. No error.

Answer: Option B

Explanation:

he hung his head down

167. (solve as per the direction given above)

A. The eminent speaker's speech

B. was broadcasted over

C. all the major radio-stations.

D. No error.

Answer: Option B

Explanation:

was broadcast over

168. (solve as per the direction given above)

A. The meeting adjourned abruptly

B. by the Chairman after

C. about three hours of deliberation.

D. No error.

Answer: Option A

Explanation:

The meeting was abruptly adjourned

169. (solve as per the direction given above)

A. The company has put up an

advertisement

B. in newspapers

C. all over the country.

D. No error.

Answer: Option A

Explanation:

The company has inserted an

advertisement

170. (solve as per the direction given above)

A. Will you lend me

B. little money

C. to tide over this crisis.

D. No error.

Answer: Option B

Explanation:

a little money

171. (solve as per the direction given above)

A. He gave them no money

B. nor did help them

C. in any way.

D. No error.

Answer: Option B

Explanation:

and also he did not help them

172. (solve as per the direction given above)

A. The Sharmas

B. are living in this colony

C. for the last eight years.

D. No error.

Answer: Option B

Explanation:

have been living in this colony

173. (solve as per the direction given above)

A. My wife has got

B. a new job

C. a month ago.

D. No error.

Answer: Option A

Explanation:

My wife got

174. (solve as per the direction given above)

A. The ability to plan,

B. organise and coordinate work is all fundamental

C. to working within deadline.

D. No error.

Answer: Option C

Explanation:

to working within the deadline

175. (solve as per the direction given above)

A. A group of friends

B. want to visit

C. the new plant as early as possible.

D. No error.

Answer: Option B

Explanation:

wants to visit

176. (solve as per the direction given above)

A. After leaving his office

B. he went directly

C. to a restaurant.

D. No error.

Answer: Option D

177. (solve as per the direction given above)

A. He was in a hurry

B. because he had an appointment

C. with the company's director.

D. No error.

Answer: Option D

178. (solve as per the direction given above)

A. A body of volunteers

B. have been organised

C. to spread the message of the saint.

D. No error.

Answer: Option B

179. (solve as per the direction given above)

A. When I get a cold

B. it takes me weeks

C. to shake it off.

D. No error.

Answer: Option A

Explanation:

When I catch cold

180. (solve as per the direction given above)

A. Another reason for pharmaceutical companies beefing up their

B. OTC (Over the Country) divisions is that prescription drugs with proven safety records which have been reached

C. the end of the their patent protection periodare

D. allowed to be sold without a prescription. No error

Answer: Option B

Explanation:

OTC divisions is that prescription drugs with proven safety records which have reached

181. (solve as per the direction given above)

A. There is still

B. little tea

C. left in the cup.

D. No error.

Answer: Option B

Explanation:

'a little tea' or 'some tea'

182. (solve as per the direction given above)

A. He says that

B. his car does

C. eight kilometers in a litre

D. No error.

Answer: Option C

Explanation:

'eight kilometres per litre'

183. (solve as per the direction given above)

A. After opening the door

B. we entered into the room

C. next to the kitchen

D. No error.

Answer: Option B

Explanation:

we entered the room

184. (solve as per the direction given above)

A. Can I lend

B. your pencil

C. for a minute, please?

D. No error.

Answer: Option A

Explanation:

Can I borrow

185. (solve as per the direction given above)

A. Last month we celebrated

B. the wedding of our sister for whom

C. we have been looking for a suitable
alliance for three years.

D. No error.

Answer: Option C

Explanation:

we had been looking for a suitable alliance
for three years.

186. (solve as per the direction given above)

A. In an English paper

B. examiners should give as much
weightage to language

C. as they give to contents.

D. No error

Answer: Option D

187. (solve as per the direction given above)

A. I am hearing

B. a lot about

C. the problem of AIDS these days.

D. No error.

Answer: Option A

Explanation:

I hear

188. (solve as per the direction given above)

A. Unless you stop to make noise at once

B. I will have no option but to

C. bring the matter to the attention of the
police.

D. No error.

Answer: Option A

Explanation:

'Unless you stop making noise at once'

189. (solve as per the direction given above)

A. He is generally

B. more hungry

C. than she is .

D. No error.

Answer: Option D

190. (solve as per the direction given above)

A. Since India has gained Independence

B. 49 years ago.

C. much progress has been made in almost
every fielD.

D. No error.

191. (solve as per the direction given above)

A. He ensured his bank manager

B. that he would soon

C. repay the loan.

D. No error.

Answer: Option A

Explanation:

He assured his bank manager

192. (solve as per the direction given above)

A. A free press is not a privilege

B. but the organic necessity

C. in a free society.

D. No error.

Answer: Option B

Explanation:

But an organic necessity.

193. (solve as per the direction given above)

A. He explained the matter

B. at great length

C. but I was not the wiser

D. No error.

Answer: Option B

Explanation:

at length

194. (solve as per the direction given above)

A. He will end up his work

B. in the city

C. by the end of the year.

D. No error.

Answer: Option A

Explanation:

He will end his work

195. (solve as per the direction given above)

A. Even though the shirt is rather expensive

B. but I wish to

C. purchase it with my own money.

D. No error.

Answer: Option B

Explanation:

I wish to

196. (solve as per the direction given above)

A. He enquired me

B. why I had not seen him the previous day

C. as I had promised to do.

D. No error.

Answer: Option B

Explanation:

why I could not seen him the previous day

197. (solve as per the direction given above)

A. I was there

B. many a time

C. in the past.

D. No error.

Answer: Option A

Explanation:

'I have been there'

198. (solve as per the direction given above)

A. All the four sons

B. of the old man

C. quarrelled between themselves.

D. No error.

Answer: Option C

Explanation:

quarrelled among themselves

199. (solve as per the direction given above)

A. He wanted to work all night

B. but we saw that he was completely worn out

C. and so we persuaded him to stop.

D. No error.

Answer: Option B

Explanation:

but we saw that he had completely been worn out

200. (solve as per the direction given above)

A. Mr.Smith was accused for murder

B. but the court found him not guilty

C. and acquitted him.

D. No error.

Answer: Option A

Explanation:

'Mr.Smith was accused of murder'

201. (solve as per the direction given above)

A. She sang

B. very well

C. isn't it?

D. No error.

Answer: Option C

Explanation:

didn't she

202. (solve as per the direction given above)

A. I am sure that all my monthly expenses

B. would exceed the income

C. If I do not economic

D. No error.

Answer: Option C

Explanation:

If I do not economise

203. (solve as per the direction given above)

A. Whenever you go to a temple

B. you must put off

C. your shoes at the entrance.

D. No error.

Answer: Option B

Explanation:

you must take off

204. (solve as per the direction given above)

A. Having read a number of stories

B. about space travel

C. his dream now is about to visit the moon

D. No error.

Answer: Option C

Explanation:

he now dreams of visiting the moon

205. (solve as per the direction given above)

A. The party chief made it a point to state that

B. the Prime Minister and the Union Home Minister should also come.

C. and they see what his party men had seen.

D. No error.

Answer: Option C

Explanation:

and see what his party men had seen

206. (solve as per the direction given above)

A. It is easy to see that

B. a lawyer's demeanour in court

C. may be prejudicial against the interests ofhis client.

D. No error.

Answer: Option D

207. (solve as per the direction given above)

A. He is wiring

B. for the

C. last four hours

D. No error.

Answer: Option A

Explanation:

He has been wiring

208. (solve as per the direction given above)

A. She walked in

B. the room where the murder

C. had taken place.

D. No error.

Answer: Option A

Explanation:

She walked into

209. (solve as per the direction given above)

A. Were he

B. to see you,

C. he would have been surpriseD.

D. No error.

Answer: Option A

Explanation:

if he were

210. (solve as per the direction given above)

A. I could not convince them

B. because they persisted to suggest

C. that I was lying.

D. No error.

Answer: Option B

Explanation:

because they persisted in suggesting

211. (solve as per the direction given above)

A. If you listen with

B. the question carefully

C. you will be able to answer them easily

D. No error.

Answer: Option A

Explanation:

If you listen to

212. (solve as per the direction given above)

A. It is difficult

B. for anyone

C. to past time thus.

D. No error.

Answer: Option C

Explanation:

to pass time thus

213. (solve as per the direction given above)

A. The customer handed over

B. a hundred-rupees note

C. to the shopkeeper.

D. No error.

Answer: Option B

Explanation:

a hundred-rupee note

214. (solve as per the direction given above)

A. Myself and Gopal

B. will take care of

C. the function on sunday.

D. No error.

Answer: Option A

Explanation:

'Gopal and I'

215. (solve as per the direction given above)

A. It is the newspaper

B. that exposes us to the widest range

C. of human experiences and behaviour.

D. No error.

Answer: Option D

216. (solve as per the direction given above)

A. A small baby breathes about

B. 45 times per minute while

C. a child of about six years breathes about

25 times per minute.

D. No error.

Answer: Option D

217. (solve as per the direction given above)

A. I have read

B. too many books

C. by R . K . Narayan.

D. No error.

Answer: Option B

Explanation:

so many books

218. (solve as per the direction given above)

A. He was sure

B. that he should

C. win the Prize.

D. No error.

Answer: Option B

Explanation:

that he would

219. (solve as per the direction given above)

A. He is

B. too intelligent

C. to make a mistake.

D. No error.

Answer: Option D

220. (solve as per the direction given above)

A. He fell from a running train

B. and would have died

C. if the villagers did not get him admitted in the nearby hospital immediately.

D. No error.

Answer: Option C

Explanation:

if the villagers had not got him immediately admitted to a nearby hospital

Sentence Improvement

1. The workers are hell bent at getting what is due to them.

A. hell bent on getting

B. hell bent for getting

C. hell bent upon getting

D. No improvement

Answer: Option C

2. When it was feared that the serfs might go too far and gain their freedom from serfdom, the protestant leaders joined the princes at crushing them.

A. into crushing

B. in crushing

C. without crushing

D. No improvement

Answer: Option B

3. If the room had been brighter, I would have been able to read for a while before bed time.

A. If the room was brighter

B. If the room are brighter

C. Had the room been brighter

D. No improvement

Answer: Option C

4. The record for the biggest tiger hunt has not been met since 1911 when Lord Hardinge. then Viceroy of India, shot a tiger than measured 11 feet and 6 inches.

A. improved

B. broken

C. bettered

D. No improvement

Answer: Option B

5. his powerful desire brought about his downfall.

A. His intense desire

B. His desire for power

C. His fatal desire

D. No improvement

Answer: Option B

6. Will you kindly open the knot?

A. untie

B. break

C. loose

D. No improvement

Answer: Option A

7. He sent a word to me that he would be coming late.

A. sent word

B. had sent a word

C. sent words

D. No improvement

Answer: Option A

8. John had told me that he hasn't done it yet.
A. told
B. tells
C. was telling
D. No improvement
Answer: Option B

9. If he had time he will call you.
A. would have
B. would have had
C. has
D. No improvement
Answer: Option C

10. Will you lend me few rupees in this hour of need?
A. lend me any rupees
B. borrow me a few rupees
C. lend me a few rupees
D. No improvement
Answer: Option C

11. During his long discourse, he did not touch that point.
A. touch upon
B. touch on
C. touch of
D. No improvement
Answer: Option B

12. He found a wooden broken chair in the room.
A. wooden and broken chair
B. broken wooden chair
C. broken and wooden chair

D. No improvement
Answer: Option B

13. He could not look anything in the dark room.
A. look at
B. see
C. see through
D. No improvement
Answer: Option B

14. The greatest thing in style is to have a use of metaphor.
A. knowledge
B. command
C. need
D. No improvement
Answer: Option A

15. While crossing the highway a five year old child was knocked out by a passing car.
A. away
B. up
C. down
D. No improvement
Answer: Option C

16. hoping not to be disturbed, I sat down in my easy chair to read the book. I won as a prize.
A. I had won as a prize
B. I have won as prize
C. I had to win as a prize
D. No improvement
Answer: Option A

17. More than one person was killed in accident.

A. were killed

B. are killed

C. have been killed

D. No improvement

Answer: Option A

18. No one could explain how a calm and balanced person like him could penetrate such a mindless act on his friends.

A. perpetuate

B. perpetrate

C. precipitate

D. No improvement

Answer: Option B

19. Five years ago today, I am sitting in a small Japanese car, driving across Poland towards Berlin.

A. was sitting

B. sat

C. have been sitting

D. No improvement

Answer: Option A

20. I took the cycle which he bought yesterday.

A. that he bought yesterday

B. that which he had bought yesterday

C. that he had bought yesterday

D. No improvement

Answer: Option C

21. Please make it a point to send you letter at my address.

A. on my address

B. to my address

C. in my address

D. No improvement

Answer: Option B

22. If you are living near a market place you should be ready to bear the disturbances caused by traffiC.

A. to bear upon

B. to bear with

C. to bear away

D. No improvement

Answer: Option B

23. I hope you won't object to me watching while you work.

A. against me watching

B. me to watch

C. to my watching

D. No improvement

Answer: Option C

24. You cannot forbid him leaving.

A. he leaving

B. his leaving

C. him to leave

D. No improvement

Answer: Option C

25. You have come here with a view to insult me.

A. to insulting me

B. of insulting me

C. for insulting me

D. No improvement

Answer: Option A

26. 20 kms are not a great distance in these days of fast moving vehicles.
A. is not a great distance
B. is no distance
C. aren't a great distance
D. No improvement
Answer: Option A

27. The more they earn, more they spenD.
A. More they earn, more they spend
B. More they earn, the more they spend
C. The more they earn, the more they spend
D. No improvement
Answer: Option C

28. It became clear that the strangers were heading into a serious disaster.
A. along
B. towards
C. for
D. No improvement
Answer: Option B

29. The dissidents hold a great problem in every political party.
A. cause
B. give
C. pose
D. No improvement
Answer: Option A

30. I would have waited for you at the station if I knew that you would come.
A. had known
B. was knowing
C. have known
D. No improvement

Answer: Option A

31. They are social insects, living in communities, regulated by definite laws, each member of society bearing well-defined and separate part in the work of a colony.
A. who are living in communities
B. living among a community
C. who lives with a community
D. No improvement
Answer: Option D

32. Practically every part of the banana tree is used by man.
A. each part
B. any part
C. most part
D. No improvement
Answer: Option D

33. My opinion for the film is that it will bag the national warD.
A. opinion to
B. opinion about
C. opinion on
D. No improvement
Answer: Option B

34. The end of the examinations is (an) oppurtunity for celebrating.
A. chance
B. moment
C. occasion
D. No improvement
Answer: Option B

35. We were not the wiser for all this effort to explain the case to us.
A. none
B. neither
C. nevertheless
D. No improvement
Answer: Option A

36. Whenever my students come across new words, I ask them to look for them in the dictionary.
A. to look it up
B. to look them up
C. to look at them
D. No improvement
Answer: Option B

37. We look forward to hear from you.
A. hearing
B. have heard
C. listen
D. No improvement
Answer: Option A

38. It was indeed a shock for her, but she has later recovered from it.
A. since
B. then
C. afterwards
D. No improvement
Answer: Option A

39. Realising is the significance of technical education for developing country, the government laid aside a large sum on it during the last plan-perioD.
A. laid up
B. set aside
C. laid out
D. No improvement
Answer: Option B

40. If you are not clear about the meaning of a word, it is wise to look to a dictionary.
A. look for
B. look at
C. look up
D. No improvement
Answer: Option C

41. You are warned against committing the same mistake again.
A. to commit
B. for committing
C. against to commit
D. No improvement
Answer: Option D

42. No sooner he had returned home then his mother felt happy.
A. had he returned home when
B. he had returned home than
C. did he return home than
D. No improvement
Answer: Option C

43. He should move on to the next point, and not harp one sting only.
A. harp on string only
B. harp only one string
C. harp upon one string only
D. No improvement
Answer: Option C

44. Either he or I am going.
A. he or I are going
B. he is going or I am
C. I or he is going
D. No improvement
Answer: Option D

45. I hope you vividly remember the premier of the film when I, my wife and you were present in the hall.
A. my wife, I and you
B. you, I and my wife
C. my wife, you and I
D. No improvement
Answer: Option C

46. To get one's name in the Rowland Ward's book of hunting records was the hot ambition of every serious hunter.
A. extreme
B. burning
C. high
D. No improvement
Answer: Option C

47. Taxpayers are to be conscious of their privileges.
A. have to
B. need
C. ought to
D. No improvement
Answer: Option A

48. As she was suffering from high fever, she could not face the examination.
A. bear
B. suffer
C. take
D. No improvement
Answer: Option C

49. The demonstration passed off peacefully.
A. passed out
B. passed away
C. passed on
D. No improvement
Answer: Option D

50. Every time I go in a lift to my sixth floor apartment, I remember the calm and serenity of my ancestral home in the village.
A. move in a lift
B. ascend in a lift
C. take a lift
D. No improvement
Answer: Option C

51. In fact, if it hadn't been for his invaluable advice on so many occasions I wouldn't have achieved anything in life.
A. remarkable advice
B. valuable advices
C. priceless suggestion
D. No improvement
Answer: Option D

52. Mr. Smith arrived at India in June last year.
A. to
B. by
C. in
D. No improvement

Answer: Option C

53. But in all these cases conversion from scale have well-formulateD.
A. can be well-formulated
B. are well-formulated
C. well-formulated
D. No improvement
Answer: Option B

54. With a thundering roar the huge rocket soared up from the launching paD.
A. flew up
B. went upwards
C. took off
D. No improvement
Answer: Option C

55. There is dearth of woman doctor in our state. We shall have to recruit some from the other states.
A. women doctor
B. woman doctors
C.
women doctors
D. No improvement
Answer: Option C

56. If you cross the line you will be disqualifieD.
A. cross upon the line
B. cross on the line
C. cross out the line
D. No improvement
Answer: Option D

57. Why the dinosaurs died out is not known.
A. it is not known
B. the reason is not known
C. that is not known
D. No improvement
Answer: Option D

58. His father won't be able to leave for Varnasi until they have arriveD.
A. until they arrive
B. until they will have arrived
C. until they will arrive
D. No improvement
Answer: Option A

59. I will not go to school, if it shall rain tomorrow.
A. it would rain tomorrow
B. it will rain tomorrow
C. it rains tomorrow
D. No improvement
Answer: Option C

60. If I stood alone in defence of truth, and the whole world is banded against me and against truth. I would fight them all.
A. will be banded
B. were banded
C. banded
D. No improvement
Answer: Option B

61. He has not and can never be in the good books of his employer because he lacks honesty.
A. has not and cannot be

B. has not and can never been

C. has not been and can never be

D. No improvement

Answer: Option C

62. When the examinations were over Anil and me went to our native town.

A. me and Anil

B. Anil and I

C. I and Anil

D. No improvement

Answer: Option B

63. Our office clock is not so correct as it should be it is usually five minutes fast.

A. right

B. regular

C. accurate

D. No improvement

Answer: Option C

64. The cloud of misfortunes appears to have blown out.

A. over

B. up

C. away

D. No improvement

Answer: Option A

65. While we would like that all Indian Children to go to school, we need to ponder why they do not.

A. that all the Indian children

B. if all the children of India

C. all Indian children

D. No improvement

Answer: Option C

66. In India today many of our intellectuals still talk in terms of the French Revolution and the Rights of Man, not appreciating that much has happened since then.

A. much has been happening

B. much had happened

C. much might happen

D. No improvement

Answer: Option D

67. I shall be grateful to you if you are of help to me now.

A. help

B. would help

C. helped

D. No improvement

Answer: Option B

68. The logic of Berlin wall already had been undermined but when the news came through that the wall itself had been opened I jumped into a car.

A. had been undetermined already

B. had already been undetermined

C. had been already undetermined

D. No improvement

Answer: Option B

69. Other countries have eradicated this disease ten years ago.

A. eradicated

B. had eradicated

C. did eradicated

D. No improvement

Answer: Option A

70. Young men and women should get habituated to reading and writing about current affairs.
A. used
B. prepared
C. trained
D. No improvement
Answer: Option D

71. The poor villagers have waited in the bitter cold for more than 4 hours now.
A. have been waiting
B. had waited
C. has been waiting
D. No improvement
Answer: Option A

72. The old man felled some trees in the garden with hardly no effort at all.
A. hard effort
B. hardly any effort
C. a hardly any effort
D. No improvement
Answer: Option B

73. The company goes to great length to ensure that employees can be comfortable in their work environment.
A. are comfortable
B. will be comfortable
C. should be comfortable
D. No improvement
Answer: Option A

74. I want you to clearly understand that excuses won't do
A. you clearly to understand
B. you to understand clearly
C. to clearly understand you
D. No improvement
Answer: Option D

75. He was fined for careless driving.
A. got fined
B. fined
C. was to be fined
D. No improvement
Answer: Option D

76. Although India is still by far a poor country, it can become rich if its natural and human resources are fully utiliseD.
A. few and far between
B. by and large
C. by and by
D. No improvement
Answer: Option B

77. The reason why he wrote the letter was because he could not contact him over the phone.
A. why he wrote the letter was since
B. for which he wrote the letter because
C. why he wrote the letter was that
D. No improvement
Answer: Option B

78. As he is past his teens now, he can look for himself.
A. after
B. to
C. around
D. No improvement
Answer: Option A

79. There is no more room for you in this compartment.
A. there is no more seat
B. there is no more space
C. there is no more accommodation
D. No improvement
Answer: Option B

80. Most donors would seriously protest any effort to extrapolate from such limited datA.
A. protest against
B. protest at
C. protest to
D. No improvement
Answer: Option A

81. She says she's already paid me back, but I can't remember, so I 'll have to take her worD.
A. to take her word true
B. to take her at her word
C. to take her word for it
D. No improvement
Answer: Option B

82. If you had attended the meeting, you would have benefited a great deal.
A. could benefit
B. would benefit
C. benefited
D. No improvement
Answer: Option D

83. This matter admits of no excuse.
A. admits to
B. admits from
C. admits
D. No improvement
Answer: Option D

84. If he would have tried he would have succeedeD.
A. is tried
B. was tried
C. had tried
D. No improvement
Answer: Option C

85. It will be no good trying to find an excuse next time.
A. to try to find
B. to try finding
C. trying finding
D. No improvement
Answer: Option A

86. Please remind me of posting these letters to my relatives.
A. by posting
B. to post
C. for posting
D. No improvement
Answer: Option B

87. Not a word they spoke to the unfortunate wife about it
A. did they speak
B. they will speak
C. they had spoken
D. No improvement
Answer: Option A

88. Not long back, in Japan, a mysterious nerve gas affected a large number of people.
A. effected
B. infected
C. infested
D. No improvement
Answer: Option B

89. We had nothing to eat since 8'o clock, this morning.
A. have had nothing
B. has had nothing
C. did have nothing
D. No improvement
Answer: Option A

90. We did not see this movie yet.
A. have seen
B. have not seen
C. have seen
D. No improvement
Answer: Option B

91. My friend was in hospital for a week after an accident.
A. through
B. following
C. for
D. No improvement
Answer: Option B

92. All, but her, had made an attempt.
A. All, but she,
B. All, but herself,
C. All, but her,
D. No improvement

Answer: Option A

93. Whatever to our other problems. we have no shortcoming to cheap labour in India.
A. default
B. deficit
C. scarcity
D. No improvement
Answer: Option C

94. I have lived in Delhi since I was four.
A. am living
B. lived
C. had lived
D. No improvement
Answer: Option D

95. This telephone number is not existing.
A. has not existed
B. does not exist
C. has not been existing
D. No improvement
Answer: Option B

96. I shall not go until I am invited.
A. till I am invited
B. Unless I am invited
C. if not I am invited
D. No improvement
Answer: Option B

97. He died in the year 1960 at 11pm on 14 July.
A. on 14 July in the year 1960 at 11pm
B. in the year 1960 on 14 July at 11pm
C. at 11pm on 14 July in the year 1960

D. No improvement

Answer: Option C

98. Due to these reason we are all in favour of universal compulsory education.

A. Out of these reasons

B. For these reasons

C. By these reasons

D. No improvement

Answer: Option B

Antonyms

In the following questions choose the word which is the exact OPPOSITE of the given words.

1. ENORMOUS

A. Soft

B. Average

C. Tiny

D. Weak

Answer: Option C

2. COMMISSIONED

A. Started

B. Closed

C. Finished

D. Terminated

Answer: Option D

3. ARTIFICIAL

A. Red

B. Natural

C. Truthful

D. Solid

Answer: Option B

4. EXODUS

A. Influx

B. Home-coming

C. Return

D. Restoration

Answer: Option A

5. RELINQUISH

A. Abdicate

B. Renounce

C. Possess

D. Deny

Answer: Option C

6. EXPAND

A. Convert

B. Condense

C. Congest

D. Conclude

Answer: Option B

7. MORTAL

A. Divine

B. Immortal

C. Spiritual

D. Eternal

Answer: Option B

8. QUIESCENT

A. ACTIVE

B. Dormant

C. Weak

D. Unconcerned

Answer: Option A

9. OBEYING

A. Ordering

B. Following

C. Refusing

D. Contradicting

Answer: Option A

10. FRAUDULENT

A. Candid

B. Direct

C. Forthright

D. Genuine

Answer: Option D

11. FLAGITIOUS

A. Innocent

B. Vapid

C. Ignorant

D. Frivolous

Answer: Option A

12. BELITTLE

A. Criticize

B. Flatter

C. Exaggerate

D. Adore

Answer: Option C

13. STARTLED

A. Amused

B. Relaxed

C. Endless

D. Astonished

Answer: Option B

14. BUSY

A. Occupied

B. Engrossed

C. Relaxed

D. Engaged

Answer: Option C

15. FRESH

A. Faulty

B. Sluggish

C. Disgraceful

D. Stale

Answer: Option D

16. CULPABLE

A. Defendable

B. Blameless

C. Careless

D. Irresponsible

Answer: Option B

17. EVASIVE

A. Free

B. Honest

C. Liberal

D. Frank

Answer: Option B

18. GREGARIOUS

A. Antisocial

B. Glorious

C. Horrendous

D. Similar

Answer: Option A

19. AWARE

A. Uncertain

B. Ignorant

C. Sure

D. Doubtful

Answer: Option B

20. HIRSUTE

A. Scaly

B. Bald

C. Erudite

D. Quiet

Answer: Option B

21. SHRINK

A. Contract

B. Spoil

C. Expand

D. Stretch

Answer: Option C

22. COMMON

A. Rare

B. Small

C. Petty

D. Poor

Answer: Option A

23. COMFORT

A. Uncomfort

B. Miscomfort

C. Discomfort

D. None Of These

Answer: Option C

24. DEAR

A. Priceless

B. Free

C. Worthless

D. Cheap

Answer: Option D

25. ARROGANT

A. Humble

B. Cowardly

C. Egotistic

D. Gentlemanly

Answer: Option A

26. VICTORIOUS

A. Defeated

B. Annexed

C. Destroyed

D. Vanquished

Answer: Option A

27. GRACEFUL

A. Rough

B. Expert

C. Miserable

D. Awkward

Answer: Option D

28. NADIR

A. Modernity

B. Zenith

C. Liberty

D. Progress

Answer: Option B

29. EXTRAVAGANCE

A. Luxury

B. Poverty

C. Economical

D. Cheapness

Answer: Option C

30. PERTINENT

A. Irrational

B. Irregular

C. Insistent

D. Irrelevant

Answer: Option D

31. OBSCURE

A. Implicit

B. Obnoxious

C. Explicit

D. Pedantic

Answer: Option C

32. URBANE

A. Illiterate

B. Backward

C. Discourteous

D. Orthodox

Answer: Option C

33. VANITY

A. Pride

B. Humility

C. Conceit

D. Ostentatious

Answer: Option B

34. RARELY

A. Hardly

B. Definately

C. Frequently

D. Periodically

Answer: Option C

35. MALICIOUS

A. Kind

B. Boastful

C. Generous

D. Indifferent

Answer: Option A

36. EPILOGUE

A. Dialogue

B. Prelude

C. Post script

D. Epigram

Answer: Option B

37. CAPACIOUS

A. Limited

B. Caring

C. Foolish

D. Changeable

Answer: Option A

38. CONDENSE

A. Expand

B. Distribute

C. Interpret

D. Lengthen

Answer: Option A

39. ADAPTABLE

A. Adoptable

B. Flexible

C. Yielding

D. Rigid

Answer: Option D

40. SACROSANCT

A. Irreligious

B. Unethical

C. Irreverent

D. Unholy

Answer: Option D

41. INDISCREET

A. Reliable

B. Honest

C. Prudent

D. Stupid

Answer: Option C

42. FAMILIAR

A. Unpleasant

B. Dangerous

C. Friendly

D. Strange

Answer: Option D

43. TANGIBLE

A. Ethereal

B. Concrete

C. Actual

D. Solid

Answer: Option A

D. Misable

Answer: Option C

44. LOVE

A. Villainy

B. Hatred

C. Compulsion

D. Force

Answer: Option B

45. FAMOUS

A. Disgraced

B. Unknown

C. Evil

D. Popular

Answer: Option B

46. ABSOLUTE

A. Deficient

B. Faulty

C. Limited

D. Scarce

Answer: Option C

47. FRUGAL

A. Copious

B. Extravagant

C. Generous

D. Ostentatious

Answer: Option B

48. INSIPID

A. Tasty

B. Stupid

C. Discreet

D. Feast

Answer: Option A

49. ABLE

A. Disable

B. Inable

C. Unable

50. HOSTILITY

A. Courtesy

B. Hospitality

C. Relationship

D. Friendliness

Answer: Option D

51. CROWDED

A. Busy

B. Congested

C. Quiet

D. Deserted

Answer: Option D

52. COMIC

A. Emotional

B. Tragic

C. Fearful

D. Painful

Answer: Option B

53. HAPLESS

A. Cheerful

B. Consistent

C. Fortunate

D. Shapely

Answer: Option C

54. FLIMSY

A. Frail

B. Filthy

C. Firm

D. Flippant

Answer: Option C

55. EQUANIMITY

A. Resentment

B. Dubiousness

C. Duplicity

D. Excitement

Answer: Option D

56. ADDITION

A. Division

B. Enumeration

C. Subtraction

D. Multiplication

Answer: Option C

57. ZENITH

A. Acme

B. Top

C. Nadir

D. Pinnacle

Answer: Option C

58. DOUBTFUL

A. Famous

B. Certain

C. Fixed

D. Important

Answer: Option B

59. PERENNIAL

A. Frequent

B. Regular

C. Lasting

D. Rare

Answer: Option D

60. BENIGN

A. Malevolent

B. Soft

C. Friendly

D. Unwise

Answer: Option A

61. HINDRANCE

A. Aid

B. Persuasion

C. Cooperation

D. Agreement

Answer: Option A

62. EXTRICATE

A. Manifest

B. Palpable

C. Release

D. Entangle

Answer: Option D

63. REPRESS

A. Inhibit

B. Liberate

C. Curb

D. Quell

Answer: Option B

64. ACQUITTED

A. Freed

B. Burdened

C. Convicted

D. Entrusted

Answer: Option C

65. PROVOCATION

A. Vocation

B. Pacification

C. Peace

D. Destruction

Answer: Option B

66. SUBSERVIENT

A. Aggressive

B. Straightforward

C. Dignified

D. Supercilious

Answer: Option C

67. LEND

A. Borrow

B. Cheat

C. Pawn

D. Hire

Answer: Option A

68. FAINT-HEARTED

A. Warm-hearted

B. Full-blooded

C. Hot-blooded

D. Stout-hearted

Answer: Option D

69. REMISS

A. Forgetful

B. Watchful

C. Dutiful

D. Harmful

Answer: Option C

70. TRANSPARENT

A. Semi-transparent

B. Muddy

C. Opaque

D. Dark

Answer: Option C

71. HONORARY

A. Dishonorable

B. Reputed

C. Paid

D. Official

Answer: Option C

72. METICULOUS

A. Mutual

B. Shaggy

C. Meretricious

D. Slovenly

Answer: Option D

73. LOQUACIOUS

A. Reticent

B. Talkative

C. Garrulous

D. Verbose

Answer: Option A

74. CONFESS

A. Deny

B. Refuse

C. Contest

D. Contend

Answer: Option A

75. ANNOY

A. Praise

B. Rejoice

C. Please

D. Reward

Answer: Option C

76. REPEL

A. Attend

B. Concentrate

C. Continue

D. Attract

Answer: Option D

77. SUPPRESS

A. Encourage

B. Allow

C. Praise

D. Permit

Answer: Option A

78. NIGGARDLY

A. Frugal

B. Thrifty

C. Stingy

D. Generous

Answer: Option D

79. IMPASSE

A. Resurgence

B. Breakthrough

C. Continuation

D. Combination

Answer: Option B

80. HAPHAZARD

A. Fortuitous

B. Indifferent

C. Deliberate

D. Accidental

Answer: Option C

81. DENSITY

A. Rarity

B. Intelligence

C. Clarity

D. Brightness

Answer: Option A

82. ADHERENT

A. Detractor

B. Enemy

C. Alien

D. Rival

Answer: Option B

83. BASE

A. Climax

B. Height

C. Top

D. Roof

Answer: Option C

84. PATCHY

A. Attractive

B. Uniform

C. Simple

D. Clear

Answer: Option B

85. ENMITY

A. Important

B. Unnecessary

C. Friendship

D. Likeness

Answer: Option C

86. HOLLOW

A. Filled

B. Solid

C. Strong

D. Substantial

Answer: Option B

87. VALUABLE

A. Invaluable

B. Worthless

C. Inferior

D. Lowly

Answer: Option B

88. GULLIBLE

A. Incredulous

B. Fickle

C. Easy

D. Stylish

Answer: Option A

89. INDUSTRIOUS

A. Indifferent

B. Indolent

C. Casual

D. Passive

Answer: Option B

90. AUTONOMY

A. Slavery

B. Subordination

C. Dependence

D. Submissiveness

Answer: Option C

91. ALIEN

A. Native

B. Domiciled

C. Natural

D. Resident

Answer: Option A

92. SYNTHETIC

A. Affable

B. Natural

C. Plastic

D. Cosmetic

Answer: Option B

93. BALANCE

A. Disbalance

B. Misbalance

C. Debalance

D. Imbalance

Answer: Option D

94. LIABILITY

A. Property

B. Assets

C. Debt

D. Treasure

Answer: Option B

95. MOUNTAIN

A. Plain

B. Plateau

C. Precipice

D. Valley

Answer: Option D

96. STATIONARY

A. Active

B. Mobile

C. Rapid

D. Busy

Answer: Option B

97. CONCEDE

A. Object

B. Refuse

C. Grant

D. Accede

Answer: Option B

98. VIOLENT

A. Humble

B. Harmless

C. Gentle

D. Tame

Answer: Option C

99. VIRTUOUS

A. Wicked

B. Corrupt

C. Vicious

D. Scandalous

Answer: Option A

100. GAIN

A. Loose

B. Fall

C. Lost

D. Lose

Answer: Option D

101. PRELIMINARY

A. Final

B. First

C. Secondary

D. Initial

Answer: Option A

102. DEFIANCE

A. Anxiety

B. Obedience

C. Suspicion

D. Dismay

Answer: Option B

103. ENCOURAGE

A. Dampen

B. Disapprove

C. Discourage

D. Warn

Answer: Option C

104. LUCID

A. Glory

B. Noisy

C. Obscure

D. Distinct

Answer: Option C

105. STRINGENT

A. General

B. Vehement

C. Lenient

D. Magnanimous

Answer: Option C

106. MINOR

A. Big

B. Major

C. Tall

D. Heavy

Answer: Option B

107. REVEALED

A. Denied

B. Concealed

C. Ignored

D. Overlooked

Answer: Option B

108. ESSENTIAL

A. Extra

B. Noughts

C. Minors

D. Trivial

Answer: Option A

109. HYPOCRITICAL

A. Gentle

B. Sincere

C. Amiable

D. Dependable

Answer: Option B

110. FICKLE

A. Courageous

B. Sincere

C. Steadfast

D. Humble

Answer: Option C

Section 2

1. History **abounds in** instances of courage.

A. shines

B. lacks

C. suffices

D. fails

Answer: Option B

2. The inhabitants of the island were **barbarians.**

A. civilized

B. cruel

C. uncivilized

D. bad

Answer: Option A

3. The members thought that the task was **feasible**.

A. impractical

B. impossible

C. difficult

D. impracticable

Answer: Option A

4. **Crestfallen** he returned as he had never faced such humiliation in the whole of his life.

A. vainglorious

B. indignant

C. triumphant

D. disturbed

Answer: Option C

5. **Feasibility** of the project is under study.
A. unsuitability
B. cheapness
C. impropriety
D. impracticability
Answer: Option D

6. The **incessant** noise of the boring machine made it difficult for us to got to sleep at night.
A. intermittent
B. harsh
C. soft
D. constant
Answer: Option A

7. Unsettled conditions in the land led to **exodus** of hundreds of its citizens.
A. invasion
B. entry
C. immigration
D. expulsion
Answer: Option B

8. Many people try to **resist** reforms in the society.
A. fight
B. accept
C. welcome
D. repel
Answer: Option C

9. Because of the economy drive, they very unwillingly surrendered some **superfluous** posts.
A. important
B. relevant
C. significant
D. essential
Answer: Option B

10. The young leader was **reluctant** to shoulder the responsibilities of ministerial office.
A. wanting
B. willing
C. anxious
D. eager
Answer: Option B

11. Sathish point of view was correct but his behavior with his father was quite **impertinent**.
A. healthy
B. respectful
C. inadequate
D. smooth
Answer: Option B

12. This new magazine is known for its **comprehensive** coverage of news.
A. casual
B. inadequate
C. indifferent
D. superficial
Answer: Option D

13. He is well known for coming up with **impracticable** solutions.
A. easy
B. possible
C. feasible
D. alternate
Answer: Option C

14. The managing director remarked that the secretary was an **asset** to the company.
A. loss
B. liability
C. drag
D. handicap

Answer: Option B

15. You can hardly find any trace of **humility** in the man.

A. pride

B. insolence

C. arrogance

D. conceit

Answer: Option C

16. The **plantation** workers were on a collision course before the labor officer intervened.

A. retaliatory

B. perfunctory

C. conciliatory

D. circuitous

Answer: Option C

17. The result of the tournament gave them a sense of **elation**.

A. despondency

B. misery

C. disappointment

D. despair

Answer: Option D

18. The officer asked the clerk to **expedite** the matter.

A. postpone

B. defer

C. adjourn

D. delay

Answer: Option D

19. He is extremely **intelligent** but proud.

A. dull

B. weak

C. ignorant

D. simple

Answer: Option A

20. I **abhor** the ideas he sometimes expresses

A. admire

B. respect

C. applaud

D. appreciate

Answer: Option A

21. They had an **insipid** conversation.

A. lively

B. argumentative

C. loud

D. curious

Answer: Option A

22. The habit of **squandering** money should not be encouraged.

A. discarding

B. boarding

C. collecting

D. saving

Answer: Option D

23. The bedroom is at the **rear** side of this house.

A. unusual

B. front

C. upper

D. back

Answer: Option B

24. His critics found in the **overt** statements some hidden design.

A. converse

B. pervert

C. covert

D. contrived

Answer: Option C

25. He spoke against corruption with **zeal**.

A. indifference

B. calmness

C. despair

D. passiveness

Answer: Option A

26. Those who views are **progressive** often meet with formidable impediments when they begin to act.

A. revolutionary

B. retrograde

C. brave

D. outmoded

Answer: Option B

27. Everything about him, especially his talkative nature, proclaims his **effeminacy**.

A. aggressiveness

B. attractiveness

C. manliness

D. boorishness

Answer: Option C

28. **Adversity** teaches man to be humble and self-reliant.

A. sincerity

B. animosity

C. curiosity

D. prosperity

Answer: Option D

29. Given these constraint, we have no **alternative** but to suggest an improvised solution.

A. a complete

B. a preplanned

C. a permanent

D. a proscribed

Answer: Option B

30. The chairman initiated the proceedings with a **brief** speech.

A. confused

B. closed

C. started

D. complicated

Answer: Option B

31. We had a **delectable** meal yesterday.

A. heavy

B. unsavory

C. tasty

D. nice

Answer: Option B

32. There was something strange and **morbid** about the whole house.

A. healthy

B. cheerful

C. insipid

D. appealing

Answer: Option B

33. The leader was **pragmatic** in his approach to the problem facing the country.

A. indefinite

B. vague

C. idealistic

D. optimistic

Answer: Option C

34. Many people suffer setbacks in their career because of their inherent **levity**.

A. seriousness

B. solemnity

C. religiosity

D. gravity

Answer: Option D

35. The moment when jadish got order of promotion, as General Manager, was a **memorable** occasion for him and his family.

A. passing

B. immemorial

C. forgetful

D. innocuous

Answer: Option B

36. They took note of **humility** of the visiting dignitary.

A. grandeur

B. arrogance

C. friendliness

D. decency

Answer: Option B

37. Harish displays **enthusiasm** whenever he is posed with a problem.

A. eagerness

B. weakness

C. indifference

D. softness

Answer: Option C

38. I was surprised at his **stiff** attitude.

A. courteous

B. flexible

C. soft

D. lively

Answer: Option B

39. It was done in a **haphazard** manner.

A. planned

B. excellent

C. extraordinary

D. designed

Answer: Option A

40. He **abandoned** his family.

A. supported

B. encouraged

C. pleased

D. saved

Answer: Option A

41. In a literary work **obscurity** cab be a virtue.

A. clarity

B. precision

C. definiteness

D. specificity

Answer: Option A

42. It was universally characterized as a **progressive** measure.

A. regressive

B. obstructive

C. retrograde

D. abhorrent

Answer: Option A

43. Mala was often teased as **corpulent** by her friends.

A. fat

B. belligerent

C. garrulous

D. gaunt

Answer: Option D

44. His **vindictive** nature often came up for comment among his friends.

A. forgetful

B. forgiving

C. obedient

D. timid

Answer: Option B

45. The minister gave a public speech on the controversial subject to **precipitate** the matter.

A. aggravate

B. create

C. defer

D. push

Answer: Option C

46. Poet often prefer **ambiguity** to

A. clarity

B. certainty

C. rationality

D. perversity

Answer: Option A

47. In ancient India, scholars had no interest in political power or **material** growth.

A. internal

B. spiritual

C. psychic

D. celestial

Answer: Option B

48. The atmosphere in that desolate place looked **ominous**.

A. pleasant

B. encouraging

C. auspicious

D. favorable

Answer: Option C

49. Like poverty, **affluence** can sometimes create its own problems.

A. indigence

B. opulence

C. sorrow

D. exuberance

Answer: Option A

50. The atmosphere in the institute he had newly joined **congenial to** research.

A. disagreeable for

B. inconvenient for

C. unpleasant for

D. unsuitable for

Answer: Option A

51. Dinesh could manage his family satisfactory with his **meager** income.

A. continuous

B. fabulous

C. hard

D. adequate

Answer: Option D

52. His short but pointed speech was **applauded** by all sections of the audience.

A. disapproved

B. misunderstood

C. praised

D. welcomed

Answer: Option A

53. I thought about her a lot during the **following** months.

A. succeeding

B. proceeding

C. preceding

D. receding

Answer: Option C

54. His interpretation of the poem is **superficial**.

A. mysterious

B. difficult

C. profound

D. mystical

Answer: Option C

55. The chairman **rebuked** the accounts for not supervising officer for not supervising the work of his subordinates.

A. received

B. awarded

C. invited

D. praised

Answer: Option D

56. It is one of **pernicious** customs prevailing in the society.

A. permanent

B. beneficial

C. parochial

D. dangerous

Answer: Option B

57. He was asked to **accelerate** the pace of work.
A. supervise
B. slacken
C. control
D. check
Answer: Option B

58. The commission took two years to go through the **massive** collection of files and documents before preparing its report.
A. meager
B. heavy
C. light
D. short
Answer: Option A

59. He is the most **prudent** person. I have ever came across.
A. shortsighted
B. reckless
C. inconsiderate
D. injudicious
Answer: Option B

60. According to a great philosopher **magnanimity** in a man implies many other qualities.
A. enmity
B. meanness
C. jealousy
D. poverty
Answer: Option B

61. Nothing has been organized properly and confusion seems **inevitable**.
A. inevident
B. inefficient
C. ineligible
D. uncertain
Answer: Option A

62. What he tells me **confirms** my ideas.
A. strengthens
B. opposes
C. contradicts
D. verifies
Answer: Option C

63. The actor is well known both for his **humility** and courage.
A. pride
B. determination
C. honesty
D. gentleness
Answer: Option A

64. The General Manager is quite **tactful** and handles the workers union very effectively.
A. disciplined
B. naive
C. strict
D. loose
Answer: Option B

65. The error in the newspaper article is **incidental**.
A. intentional
B. conventional
C. usual
D. permissible
Answer: Option A

66. The club meets on the last Thursday of every month is a **dilapidated** palace.
A. neglected
B. regenerated
C. renovated
D. furnished
Answer: Option C

67. A **friendly** dog meets us at the farm gate.

A. helpful

B. understanding

C. quiet

D. hostile

Answer: Option D

68. In the interest of one's own reputation one should avoid ostentation while entertaining friends.

A. miserliness

B. simplicity

C. purity

D. innocence

Answer: Option A

69. She used to **disparage** her neighbor every now and then.

A. please

B. praise

C. belittle

D. denigrate

Answer: Option B

70. The story told by the teacher **amused** children in the class.

A. frightened

B. jolted

C. astonished

D. saddened

Answer: Option D

Selecting Words

1. Fate smiles ...... those who untiringly grapple with stark realities of life.

A. with

B. over

C. on

D. round

Answer: Option C

2. The miser gazed ...... at the pile of gold coins in front of him.

A. avidly

B. admiringly

C. thoughtfully

D. earnestly

Answer: Option A

3. Catching the earlier train will give us the ...... to do some shopping.

A. chance

B. luck

C. possibility

D. occasion

Answer: Option A

4. I saw a ...... of cows in the field.

A. group

B. herd

C. swarm

D. flock

Answer: Option B

5. The grapes are now ...... enough to be picked.

A. ready

B. mature

C. ripe

D. advanced

Answer: Option C

6. Success in this examination depends ...... hard work alonE.

A. at

B. over

C. for

D. on

Answer: Option D

7. My uncle decided to take ...... and my sister to the market.

A. I

B. mine

C. me

D. myself

Answer: Option C

8. If you smuggle goods into the country, they may be ...... by the customs authority.

A. possessed

B. punished

C. confiscated

D. fined

Answer: Option C

9. Man does not live by ...... alone.

A. food

B. bread

C. meals

D. diet

Answer: Option B

10. Piyush behaves strangely at times and, therefore, nobody gets ...... with him.

A. about

B. through

C. along

D. up

Answer: Option C

11. Rohan and Rohit are twin brothers, but they do not look ......

A. unique

B. different

C. likely

D. alike

Answer: Option D

12. To err is ...... to forgive divinE.

A. beastly

B. human

C. inhuman

D. natural

Answer: Option B

13. The ruling party will have to put its own house ...... order.

A. in

B. on

C. to

D. into

Answer: Option A

14. ...... of old paintings is a job for experts.

A. Resurrection

B. Retrieval

C. Restoration

D. Resumption

Answer: Option C

15. During Diwali the shops are ...... of peoplE.

A. busy

B. full

C. crowded

D. bubbling

Answer: Option B

16. The paths of glory lead ...... to the gravE.

A. straight

B. but

C. in

D. directly

Answer: Option B

17. The telephone ...... several times before I answered it.

A. was ringing

B. has rung

C. had rung

D. would ring

Answer: Option C

18. He passed the examination in the first class because he ......

A. was hard working for it

B. worked hardly for it

C. had worked hard for it

D. was working hard for it

Answer: Option C

19. Jawaharlal spent his childhood ......
Anand Bhawan.

A. at

B. in

C. on

D. across

Answer: Option A

20. If negotiations are to prove fruitful,
there must not only be sincerity on each
side, but there must also be ...... in the
sincerity of the other sidE.

A. faith

B. belief

C. substance

D. certainty

Answer: Option A

21. I hate sitting ...... him as he always
smells of garliC.

A. besides

B. along

C. at

D. beside

Answer: Option D

22. Some regions of our country still remain
...... to the average man.

A. inaccessible

B. impossible

C. impermeable

D. impenetrable

Answer: Option A

23. It ...... that Prashant will not be selected
for the post

A. feels

B. looks

C. believes

D. seems

Answer: Option D

24. In Bush, Saddam was up ...... more than
his match.

A. for

B. into

C. against

D. to

Answer: Option C

25. I haven't seen you ...... a week.

A. within

B. since

C. for

D. from

Answer: Option C

26. I listened, but I had no idea what he was
...... about.

A. saying

B. talking

C. telling

D. discussing

Answer: Option B

27. The car in which the minister was
traveling ...... with an accident.

A. hit

B. drove

C. crashed

D. met

Answer: Option D

28. The non cooperative attitude of the
members can only ...... the image of the
society.

A. spoil

B. improve

C. degrade

D. defame

Answer: Option A

29. Sonika is quite intelligent but rather ......

A. idealistic

B. generous

C. lazy

D. optimistic

Answer: Option C

30. In a little-publicised deal, Pepsi, Cola has ...... the entire soft drink market in Afghanistan.

A. occupied

B. conquered

C. swallowed

D. captured

Answer: Option D

31. He ...... in wearing the old fashioned coat in spite of his wife's disapproval.

A. insists

B. persists

C. desists

D. resists

Answer: Option B

32. She ...... a brief appearance at the end of party.

A. put on

B. put in

C. put across

D. put up

Answer: Option B

33. Life is to death as pleasure is to ......

A. poverty

B. suffering

C. anguish

D. pain

Answer: Option D

34. This, partly, explains how the Mehta family has been able to ...... its lavish lifestyle in recent times, despite the fact that all its assets have been ......

A. keep, removed

B. afford, attached

C. develop, liquidated

D. keep up, destroyed

Answer: Option D

35. The machine is difficult to build ...... easy to maintain.

A. but

B. and

C. for

D. if

Answer: Option A

36. If you work beyond your capacity, you will naturally feel ......

A. drowsy

B. tired

C. confident

D. giddy

Answer: Option B

37. If you persists in telling lies to me I shall sue you ...... slander.

A. to

B. on

C. for

D. with

Answer: Option C

38. His father-in-law ...... him up in business.

A. put

B. made

C. set

D. built

Answer: Option C

39. ...... works of reference are valuable as Encyclopedia, Britannica.

A. A few

B. Few

C. The few

D. Fewer

Answer: Option B

40. This book is quite similar ......

A. with the "Treasure Island"

B. of that film we saw at school

C. to the one I read last week

D. than a story told by our teacher

Answer: Option C

41. If our friends are not able to take us in their car, we must make ...... arrangements to go to the airport.

A. alternative

B. another

C. alternate

D. possible

Answer: Option A

42. A crescendo of metallic thuds arose from the market, where the iron-smiths were ...... the pieces of metals.

A. flattening

B. striking

C. hammering

D. thrashing

Answer: Option C

43. I haven't eaten an apple ...... a long whilE.

A. from

B. since

C. for

D. until

Answer: Option C

44. The parliament invested the new organisation ...... judicial authority.

A. by

B. with

C. from

D. through

Answer: Option B

45. Owing to the power cut in the area, factories are being forced to ...... men

A. throw away

B. send off

C. put off

D. lay off

Answer: Option D

46. Man must ...... to stop pollution.

A. act

B. perform

C. operate

D. behave

Answer: Option A

47. He was sent to the prison for his ......

A. sin

B. vice

C. crime

D. guilt

Answer: Option C

48. The answer was written ...... blue ink.

A. with

B. by

C. in

D. on

Answer: Option C

49. Many ...... decisions were taken at the meeting.

A. hectic

B. historic

C. historical

D. histrionic

Answer: Option B

50. Those who persist in the endeavor at long last triumph ...... the odds of lifE.

A. over

B. on

C. upon

D. about

Answer: Option A

51. In the modern materialistic society, the only aim of people appears to be ...... money by fair means or foul.

A. print

B. produce

C. acquire

D. extort

Answer: Option C

52. What is the ...... for an air letter?

A. fare

B. value

C. postage

D. stamp

Answer: Option C

53. He became enamored ...... her grace when he first saw her dance.

A. with

B. of

C. by

D. in

Answer: Option B

54. Rama was so badly injured that he needed ...... care in the hospital.

A. extensive

B. little

C. deep

D. intensive

Answer: Option D

55. You cannot devise a method which ...... all possibility of errors.

A. excludes

B. includes

C. avoids

D. ignores

Answer: Option A

56. Many areas of the city were ...... into darkness for several hours.

A. spread

B. plunged

C. merged

D. deep

Answer: Option B

57. Find the ...... that accompany these cartoons.

A. topics

B. titles

C. captions

D. headings

Answer: Option C

58. I don't really know how to ...... the problem.

A. tackle

B. cope

C. draw

D. erase

Answer: Option A

59. The English schemed to continue their rule in India by playing off one community ...... the other.

A. before

B. upon

C. against

D. with

Answer: Option C

60. The passengers were afraid, but the captain ...... them that there was no danger.
A. promised
B. assured
C. advised
D. counseled
Answer: Option B

61. The family gave father a gold watch on the ...... of his fiftieth birthday.
A. time
B. event
C. occasion
D. celebration
Answer: Option C

62. The park ...... as far as the river.
A. extends
B. advances
C. enlarges
D. emerges
Answer: Option A

63. Many of the advances of civilization have been conceived by young people just on the ...... of adulthood
A. boundary
B. threshold
C. peak
D. horizon
Answer: Option B

64. Arti pulled a long ...... when she was told that she could not go to Agra.
A. mouth
B. skirt
C. face
D. hand
Answer: Option C

65. Brothers must live in harmony. They must never fall ......

A. off
B. out
C. apart
D. away
Answer: Option B

66. I was astounded at his ...... lack of knowledge about the Continent of Africa.
A. abundant
B. colossal
C. huge
D. great
Answer: Option B

67. Ayesha always ...... the permission of her father before going for movies.
A. seeking
B. seeks
C. sought
D. seeker
Answer: Option B

68. He felt no ...... as he plunged the knife into her back.
A. qualms
B. scruple
C. conscience
D. morals
Answer: Option A

69. You haven't had your lunch yet, ... you?
A. are
B. aren't
C. have
D. haven't
Answer: Option C

70. The manner in which bombs exploded in five trains within a short span of time suggests that it is a part of a ......
A. game

B. conspiracy

C. villainy

D. sabotage

Answer: Option B

71. Wheat ...... carbohydrates, vitamins, proteins, and dietary fibre in our daily diet.

A. has

B. gives

C. yields

D. provides

Answer: Option D

72. The waiter hasn't brought the coffee ...... I've been here an hour already.

A. till

B. up

C. yet

D. still

Answer: Option C

73. In our zeal for progress we should not ...... executive with more power.

A. avoid

B. give

C. enhance

D. arm

Answer: Option D

74. You've only three months to complete the course, Don't give ...... now.

A. out

B. away

C. up

D. off

Answer: Option C

75. The traveler slept under the ...... shade of banyan tree.

A. cold

B. cool

C. cooling

D. dark

Answer: Option B

76. She has an aversion ...... taking even onion and garlic.

A. with

B. at

C. against

D. to

Answer: Option D

77. The river overflowed its ...... and flooded the area.

A. edges

B. fronts

C. limits

D. banks

Answer: Option D

78. ...... The arrival of the police, nobody went near the victim.

A. Unless

B. Although

C. Even

D. Till

Answer: Option D

79. When I was a child, I ......to school everyday instead going by cycle.

A. had walked

B. walked

C. have walked

D. have been walking

Answer: Option B

80. Farida sings very well and ...... does salim.

A. even

B. too

C. also

D. so

Answer: Option D

81. The old Nature versus ...... debate regarding crime continues even today.
A. Man
B. Universe
C. Culture
D. Nurture
Answer: Option A

82. The Sun ...... at six this morning.
A. raised
B. rose
C. arose
D. aroused
Answer: Option B

83. That rule is applicable ...... every one.
A. to
B. for
C. about
D. with
Answer: Option A

84. Her parents will never give their ...... to so much an unsuitable match.
A. acquiescence
B. consent
C. agreement
D. willingness
Answer: Option B

85. He tried to ...... himself against a horde of ruffians.
A. collect
B. save
C. support
D. defend
Answer: Option D

86. According to corporate circles data is pushing through the merger to create financially ...... company in the processed foods business, the group's thrust area for the 1990's
A. acceptable
B. powerful
C. leading
D. straight
Answer: Option B

87. Indeed, all over the world, more and more people are ...... coffee.
A. wanting
B. drinking
C. liking
D. partaking
Answer: Option B

88. Like any other country India has its ...... share of superstitions.
A. proper
B. abundant
C. fair
D. peculiar
Answer: Option C

89. The new education policy provides a useful ...... for the planners to remove illiteracy.
A. breakup
B. breakthrough
C. breakaway
D. break-in
Answer: Option B

90. People who ...... on horses usually lose in the end.
A. gamble
B. play
C. risk
D. place
Answer: Option A

91. About twenty clerks were made ......
when the banks introduced computers.
A. dispensable
B. redundant
C. expandable
D. obsolete
Answer: Option B

92. After the rain the weather ...... and the
sun came out.
A. cleared out
B. cleared up
C. cleared away
D. cleared off
Answer: Option B

93. The building comprises ...... sixty rooms.
A. of
B. onto
C. by
D. no preposition needed
Answer: Option D

94. Namrata was found to ...... the required
qualifications for the job.
A. contain
B. disclose
C. posses
D. acquire
Answer: Option C

95. Government buildings are ...... on the
Republic day.
A. enlightened
B. lightened
C. illuminated
D. glowed
Answer: Option C

96. we had ...... wonderful time at the party
last night.
A. such a
B. so
C. such
D. very
Answer: Option A

97. An employment advertisement should
...... the number of vacancies.
A. provide
B. specify
C. contain
D. declare
Answer: Option B

98. When varun left the cocktail party he
was as ...... as a judge.
A. sober
B. drunk
C. brave
D. wise
Answer: Option D

99. The criminal seems to have acted in ......
the three others.
A. collusion
B. coalition
C. collision
D. cohesion

100. Soft minded individuals are ...... to
embrace all kinds' superstitions.
A. disposed
B. eager
C. reluctant
D. prone
Answer: Option D

101. The stenographer is very efficient. He
is ...... to his firm.
A. a boon
B. a credit
C. a blessing
D. an asset

Answer: Option D

102. However, the group's long-term strategy is to ...... on core sector business connected with infrastructure and energy.

A. breed

B. develop

C. concentrate

D. depend

Answer: Option C

103. The man came in a van to ...... the television set.

A. mend

B. reform

C. correct

D. alter

Answer: Option A

104. Nobody can ...... me to do anything which I do not want to do.

A. encourage

B. request

C. oppose

D. compel

Answer: Option D

105. A sanguine outlook is associated with the ......

A. rationalist

B. socialist

C. philanthropist

D. optimist

Answer: Option D

106. His conduct is bad, and his honesty is not ...... suspicion.

A. above

B. beyond

C. under

D. in

Answer: Option A

107. It is 14 years since i ...... him.

A. have seen

B. had seen

C. saw

D. see

Answer: Option C

108. It being an ...... issue, it is not correct to introduce questions of morality in to the debate.

A. moral

B. immoral

C. amoral

D. irrelevant

Answer: Option D

109. Natwarlal ...... them all for a ride by producing false documents.

A. took

B. cheated

C. kept

D. let

Answer: Option A

110. True brevity ...... in saying only what needs to be said.

A. consists

B. depicts

C. portrays

D. resides

Answer: Option A

111. Health is too important to be ......

A. discarded

B. despised

C. detested

D. neglected

Answer: Option D

112. In hot weather I like lying in the ...... of a tree.

A. shade

B. shelter

C. protection

D. shadow

Answer: Option A

113. It was indeed unreasonable ...... him to leave this job and start business.

A. in

B. with

C. upon

D. of

Answer: Option D

114. One major ...... between the Election Commission and the Union Government related to the powers of the former in respect of the deployment of central police forces at places where are elections is held.

A. irritant

B. conflict

C. pain

D. culprit

Answer: Option B

115. We shall not to be able to use your ability in court unless we can find someone to ...... to statements.

A. corroborate

B. avouch

C. verify

D. approve

Answer: Option A

116. He is too dull ...... this problem.

A. solving

B. to solving

C. to solve

D. solves

Answer: Option C

117. He is the person who is ...... to blame.

A. mostly

B. sure

C. most

D. bound

Answer: Option C

118. We had to pay more taxi fare because the driver brought us by a ...... route.

A. circular

B. circumscribed

C. longest

D. circuitous

Answer: Option D

119. He was accused ...... stealing his aunt's necklace.

A. for

B. with

C. of

D. on

Answer: Option C

120. He knew everything better than anybody else, and it was an affront to his ...... vanity that you should disagree with him.

A. overstrung

B. overweening

C. overwhelming

D. overwrought

Answer: Option A

121. It's very kind of you to ...... to speak at the meeting.

A. accept

B. agree

C. comply

D. concur

Answer: Option B

122. Pakistan lost a ...... wicket just when they seemed to be doing so well, and that led to their eventual defeat.

A. critical

B. crucial

C. sensitive

D. providential

Answer: Option B

123. Sita's heart ...... at the sight of the beautiful diamond necklace.

A. leapt

B. stopped

C. slowed

D. ran

Answer: Option A

124. He lives near a lovely ...... of countryside.

A. length

B. piece

C. section

D. stretch

Answer: Option D

125. Ambition is one of those ......which are never satisfied.

A. ideas

B. fancies

C. passions

D. feeds

Answer: Option C

126. He is a person of sound character and ...... disposition.

A. beneficent

B. morous

C. amiable

D. amicable

Answer: Option C

127. If I take a state roadways bus, I'll get late, ... ?

A. isn't it

B. won't I

C. will I

D. is it

Answer: Option B

128. In high school many of us never realized the importance that grammar would ...... in later life.

A. figure

B. portray

C. play

D. exercise

Answer: Option C

129. In a changing and ...... unstructured business environment, creativity and innovation are being ...... demanded of executives.

A. highly, extremely

B. progressively, increasingly

C. increasingly, moderately

D. excessively, rapidly

Answer: Option B

130. On account of the dearth of grass on the arid plains the cattle became ......

A. flippant

B. jubilant

C. agitated

D. emaciated

Answer: Option D

131. A woman came in with a baby who, she said, ... a safety pin.

A. was just swallowing

B. swallowed

C. had just swallowed

D. just swallowed

Answer: Option C

132. The Hubble Space Telescope will search for planets around the stars, a key to the ...... extraterrestrial life, and examine

interstellar dust and gases out of which stars are born.

A. perception

B. discovery

C. enquiry

D. quest

Answer: Option D

133. She ...... Rs 80 out of the bank every Friday.

A. obtains

B. draws

C. pulls

D. extracts

Answer: Option B

134. The American ...... presented his credentials to the President of India.

A. adviser

B. ambassador

C. delegate

D. representative

Answer: Option B

135. Once he has signed the agreement, he won't be able to ......

A. back up

B. back in

C. back at

D. back out

Answer: Option D

136. It was difficult to remove my feet as it had got stuck ...... in the mud.

A. fairly

B. greatly

C. widely

D. firmly

Answer: Option D

137. He is a very careful person, he never takes side but remains ......

A. impartial

B. unbiased

C. neutral

D. prejudiced

Answer: Option A

138. West Bengal ...... plentiful rainfall and is consequently a very green part of the country.

A. misses

B. receives

C. expects

D. regrets

Answer: Option B

139. this brand of TV is quite inferior ...... that onE.

A. than

B. to

C. with

D. over

Answer: Option B

140. It is not what you say that ...... but what you do

A. matches

B. implies

C. matters

D. moves

Answer: Option C

141. 'Please' and 'Thank you' are the little courtesies by which we keep the ...... of life oiled and running smoothly.

A. path

B. machine

C. garden

D. river

Answer: Option B

142. I put ...... the light and slept.

A. up

B. down

C. in

D. out

Answer: Option D

143. ...... all intents and purposes, the manager is the master of the firm.

A. in

B. upon

C. with

D. to

Answer: Option D

144. The pilot had been warned about the storm, before he ......

A. took away

B. took up

C. took over

D. took off

Answer: Option D

145. Hardly had he arrived ...... it started raining.

A. before

B. when

C. than

D. after

Answer: Option B

146. I ...... a car to be absolutely necessary these days.

A. consider

B. regard

C. think

D. agree

Answer: Option A

147. Besides other provisions, that shopkeeper deals ...... cosmetics.

A. with

B. in

C. at

D. for

Answer: Option B

148. Leave a two inch ...... on each page for the teacher's remarks.

A. border

B. margin

C. blank

D. gap

Answer: Option B

149. The team was well trained and strong, but somehow their ...... was low.

A. feeling

B. moral

C. consciousness

D. morale

Answer: Option D

150. The lovers were meeting each other secretly, but their ...... affair was soon known to everyonE.

A. clandestine

B. covert

C. unknown

D. candid

Answer: Option A

151. The king ...... the rebel.

A. excused

B. forgave

C. pardoned

D. none of these

Answer: Option C

152. I shall call ...... you tomorrow.

A. at

B. on

C. with

D. by

Answer: Option C

153. She ...... from the crowd because of her height and flaming red hair.

A. stood out

B. stood off

C. stood up

D. stood by

Answer: Option A

154. In a large cities people are cut ...... from nature.

A. away

B. off

C. out

D. down

Answer: Option A

155. The more your action and thought are allied and ...... the happier you grow.

A. diverged

B. unraveled

C. integrated

D. invincible

Answer: Option C

156. We had a ...... of warm weather in February.

A. time

B. spell

C. length

D. phase

Answer: Option B

157. Physically we are now all neighbors, but psychologically. we are ...... to each other.

A. primitives

B. complimentary

C. strangers

D. cowards

Answer: Option C

158. When their examinations are over, the children gleefully ...... the books they had been reading.

A. shelve

B. sidetrack

C. overthrew

D. abandon

Answer: Option D

159. Chintu is ...... small to start playing cricket now.

A. very

B. much

C. too

D. more

Answer: Option C

160. The thief ...... all the money.

A. made up

B. made off with

C. mode do with

D. made good

Answer: Option B

161. The luggage was ...... heavy for him to lift

A. much

B. as

C. so

D. too

Answer: Option D

162. Walking at 3'o clock, I heard the ...... of thunder.

A. crackle

B. rumble

C. ripple

D. clank

Answer: Option B

163. A stone that goes on rolling ...... no moss.

A. collects

B. gets

C. gathers

D. accumulates

Answer: Option C

164. The earth is at present in great danger of becoming uninhabitable because of ...... environmental pollution which is going on at an incredible rapid pace.

A. gigantic

B. inhuman

C. stupendous

D. colossal

Answer: Option D

165. Moreover, a fact finding mission ...... by BSN to India in January this year strongly recommended that the French group should go it alone, and not hand over ...... to an Indian Partner.

A. organized, papers

B. constituted, authority

C. sponsored, power

D. dispatched, control

Answer: Option D

166. There is a keen ...... in each trade.

A. contest

B. comparison

C. competition

D. cooperation

Answer: Option C

167. Now, the management graduate can expect to have a prosperous life on a ...... income without having to depend on finding a place in family business having to tend the paternal estates.

A. professional

B. regular

C. meaningful

D. dependable

Answer: Option B

168. The boy fell ...... bicycle.

A. of

B. off

C. from

D. under

Answer: Option B

169. The French ...... reputed to have a very good sense of humor.

A. is

B. was

C. are

D. will be

Answer: Option C

170. Johny, where are you? ...... up this tree.

A. There I am

B. There am I

C. Here am I

D. Here I am

Answer: Option D

171. That the poor in our country, are happy is

A. a dream

B. a vision

C. an ideal

D. an illusion

Answer: Option D

172. The robbers were arrested and ...... prison yesterday.

A. brought into

B. brought to

C. taken into

D. taken to

Answer: Option D

173. The cinema ...... a welcome escape from cramped and dull city life and the Indians are avid movie-goers.

A. depicts

B. highlights

C. follows

D. offers

Answer: Option D

174. I shall take revenge ...... you.

A. from

B. with

C. on

D. at

Answer: Option C

175. This book is a useful ...... to our library.

A. discovery

B. asset

C. addition

D. arrival

Answer: Option C

176. The boy was cured ...... typhoid.

A. from

B. of

C. for

D. through

Answer: Option B

177. The communalist represents the ...... of everything noble that we have inherited from our culture and history.

A. antithesis

B. antidote

C. immorality

D. antagonism

Answer: Option A

178. He is so ...... to light that he never leaves the house without sunglasses.

A. insensitive

B. sensitive

C. afraid

D. immune

Answer: Option B

179. The ...... of the Minister's statement cannot be verified by people who have no access to official records.

A. veracity

B. verbosity

C. ambiguity

D. validity

Answer: Option A

180. But the introductory fee does not stop after the initial handshake, brokers have to ...... it up after each transaction.

A. bring

B. cough

C. boost

D. give

Answer: Option A

181. Colgate has also set an ambitious aim of ......on 8% value shared of tooth paste market by then end of first years.

A. cornering

B. soliciting

C. disturbing

D. keeping

Answer: Option A

182. ...... a failure of some traffic lights, traffic is moving very slowly.

A. Owing

B. Due to

C. Because

D. Since

Answer: Option B

183. The battalion operating from the mountain was able to ...... three enemy divisions.
A. tie up
B. tie down
C. tie on
D. tie with
Answer: Option B

184. I purposely ...... meet you during my last visit to Kashmir.
A. didn't
B. won't
C. hadn't
D. wouldn't
Answer: Option A

185. I have read one novel by PremchanD. I want to read ...... novel by him.
A. other
B. another
C. all
D. few
Answer: Option B

186. A man remains narrow minded, self compliance and ignorant unless he visits other people and ...... from them.
A. earns
B. borrows
C. learns
D. hears
Answer: Option C

187. My father ...... down for a nap.
A. lays
B. laid
C. lain
D. lie
Answer: Option A

188. I think they allow their children too much ......
A. liberality
B. latitude
C. lassitude
D. levity
Answer: Option B

189. Once you suspect a person of double dealing, you ought to keep him at arm's ......
A. distance
B. length
C. aim
D. width
Answer: Option B

190. Affix a revenue stamp and put your signature ...... it.
A. on
B. upon
C. above
D. over
Answer: Option A

191. My first lesson ...... forgiveness came from my mother.
A. upon
B. about
C. in
D. on
Answer: Option D

192. At one point, it looked as if an area of agreement would ...... specially over the issue of productivity linked wages.
A. develop
B. come out
C. emerge
D. grow
Answer: Option C

193. Do you know ......?

A. where she comes from

B. where does she come from

C. where from she comes

D. from where does she come

Answer: Option A

194. God is ......

A. graceful

B. gracious

C. grateful

D. greatful

Answer: Option B

195. He is so ...... that he immediately believe my story of ghosts.

A. innocent

B. credulous

C. vociferous

D. credible

Answer: Option B

Spellings - Section 1

1. (solve as per the direction given above)

A. Efficient

B. Treatmeant

C. Beterment

D. Employd

Answer: Option A

2. (solve as per the direction given above)

A. Foreign

B. Foreine

C. Fariegn

D. Forein

Answer: Option A

3. (solve as per the direction given above)

A. Ommineous

B. Omineous

C. Ominous

D. Omenous

Answer: Option C

4. (solve as per the direction given above)

A. Pessenger

B. Passenger

C. Pasanger

D. Pesanger

Answer: Option B

5. (solve as per the direction given above) A. Benefitted

B. Benifited

C. Benefited

D. Benefeted

Answer: Option C

6. (solve as per the direction given above) A. Treachrous

B. Trecherous

C. Trechearous

D. Treacherous

Answer: Option D

7. (solve as per the direction given above) A. Forcast

B. Forecaste

C. Forcaust

D. Forecast

Answer: Option D

8. (solve as per the direction given above) A. Rigerous

B. Rigourous

C. Regerous

D. Rigorous

Answer: Option D

9. (solve as per the direction given above) A. Palete

B. Palet

C. Palate

D. Pelate

Answer: Option C

10. (solve as per the direction given above)

A. Bouquete

B. Bouquette

C. Bouquet

D. Boqquet

Answer: Option C

11. (solve as per the direction given above)

A. Vetarinary

B. Veteninary

C. Vetinary

D. Veterinary

Answer: Option D

12. (solve as per the direction given above)

A. Chancelary

B. Chancellery

C. Chancelery

D. Chancellary

Answer: Option B

13. (solve as per the direction given above)

A. Excessive

B. Exccessive

C. Exxcesive

D. Excesive

Answer: Option A

14. (solve as per the direction given above)

A. Indipensable

B. Indipenseble

C. Indispansible

D. Indispensable

Answer: Option D

15. (solve as per the direction given above)

A. Humorous

B. Ganerous

C. Pupolous

D. Maretorious

Answer: Option A

16. (solve as per the direction given above)

A. Itinarery

B. Itinerary

C. Itenary

D. Itinarary

Answer: Option B

17. (solve as per the direction given above)

A. Survaillance

B. Surveillance

C. Survellance

D. Surveilance

Answer: Option B

18. (solve as per the direction given above)

A. Sepulchral

B. Sepilchrle

C. Sepalchrul

D. Sepalchrl

Answer: Option A

19. (solve as per the direction given above)

A. Acommodation

B. Accomodaton

C. Accommodation

D. Acomodation

Answer: Option C

20. (solve as per the direction given above)

A. Faithfuly

B. Sincerely

C. Truely

D. Affectionatly

Answer: Option B

21. (solve as per the direction given above)

A. Klaptomania

B. Klepptomania

C. Kleptemania

D. Kleptomania

Answer: Option D

22. (solve as per the direction given above)
A. Schedulle
B. Schedeule
C. Schdule
D. Schedule
Answer: Option D

23. (solve as per the direction given above)
A. Skillful
B. Skillfull
C. Skilfull
D. Skilpull
Answer: Option A

24. (solve as per the direction given above)
A. Judicious
B. Cancious
C. Dilicous
D. Gracous
Answer: Option A

25. (solve as per the direction given above)
A. Gaurantee
B. Guarantee
C. Garuntee
D. Guaruntee
Answer: Option B

26. (solve as per the direction given above)
A. Friming
B. Burnning
C. Running
D. Fryng
Answer: Option C

27. (solve as per the direction given above)
A. Dammage
B. Damaige
C. Dammege
D. Damage
Answer: Option D

28. (solve as per the direction given above)
A. Accomplish
B. Acomplush
C. Ackmplesh
D. Accompalish
Answer: Option A

29. (solve as per the direction given above)
A. Puerrile
B. Puerrille
C. Purrile
D. Puerile
Answer: Option D

30. (solve as per the direction given above)
A. Satelite
B. Sattelite
C. Satellite
D. Sattellite
Answer: Option C

31. (solve as per the direction given above)
A. Inoculation
B. Innoculation
C. Inocculation
D. Inocullation
Answer: Option A

32. (solve as per the direction given above)
A. Velnerable
B. Vulnarable
C. Vulnerable
D. Valnerable
Answer: Option C

33. (solve as per the direction given above)
A. Simpal
B. Bannar
C. Pattren
D. Modern
Answer: Option D

34. (solve as per the direction given above)
A. Scripher
B. Scripture
C. Skripture
D. Scriptur
Answer: Option B

35. (solve as per the direction given above)
A. Comitte
B. Commitee
C. Committee
D. Comiittee
Answer: Option C

36. (solve as per the direction given above)
A. Exaggerate
B. Exeggrate
C. Exagerate
D. Exadgerate
Answer: Option A

37. (solve as per the direction given above)
A. Asspersion
B. Voluptuous
C. Voguei
D. Equestrain
Answer: Option B

38. (solve as per the direction given above)
A. Hindrance
B. Hinderrance
C. Hindrence
D. Hinderence
Answer: Option A

39. (solve as per the direction given above)
A. Parallelled
B. Parralleled
C. Paralleled
D. Paraleled
Answer: Option C

40. (solve as per the direction given above)
A. Lckadaisicle
B. Lackdaisical
C. Lackadisical
D. Lackadaisical
Answer: Option D

41. (solve as per the direction given above)
A. Equanimity
B. Equannimity
C. Equanimmity
D. Equinimity
Answer: Option A

42. (solve as per the direction given above)
A. Occured
B. Occurad
C. Ocurred
D. Occurred
Answer: Option D

43. (solve as per the direction given above)
A. Swelte
B. Filpant
C. Licentious
D. Puessile
Answer: Option C

44. (solve as per the direction given above)
A. Grief
B. Breif
C. Recieve
D. Diceive
Answer: Option A

45. (solve as per the direction given above)
A. Furnituer
B. Exampel
C. Medicine
D. Sampal
Answer: Option C

46. (solve as per the direction given above)

A. Eflorescence

B. Efllorescence

C. Efflorescence

D. Efflorascence

Answer: Option C

47. (solve as per the direction given above)

A. Exterminatte

B. Inexpliccable

C. Offspring

D. Reffere

Answer: Option C

48. (solve as per the direction given above)

A. Occasion

B. Occassion

C. Ocasion

D. Ocassion

Answer: Option A

49. (solve as per the direction given above)

A. Entrepreneur

B. Entrapreneur

C. Entrepraneur

D. Enterprenuer

Answer: Option A

Section 2

1. (solve as per the direction given above) A. Appraise

B. Commend

C. Mentanence

D. Behavior

E. All correct

Answer: Option C

2. (solve as per the direction given above) A. Passion

B. Fashion

C. Ration

D. Tution

E. All correct

Answer: Option D

3. (solve as per the direction given above) A. Amature

B. Manual

C. Nephew

D. Athletic

E. All correct

Answer: Option A

4. (solve as per the direction given above) A. Inflamable

B. Musician

C. Righteousness

D. Negotiate

E. All correct

Answer: Option A

5. (solve as per the direction given above) A. Geography

B. History

C. Chemistry

D. Commerce

E. All correct

Answer: Option E

6. (solve as per the direction given above) A. Immature

B. Imminent

C. Ilicit

D. Imperative

E. All correct

Answer: Option C

7. (solve as per the direction given above) A. Quarreled

B. Rebellious

C. Commission

D. Mirraculous

E. All correct

Answer: Option D

8. (solve as per the direction given above) A. Lenient

B. Nationalism

C. Overhaul

D. Transfered

E. All correct

Answer: Option D

9. (solve as per the direction given above) A. Refuse

B. Repute

C. Despute

D. Confuse

E. All correct

Answer: Option C

10. (solve as per the direction given above)

A. Urge

B. Merge

C. Perge

D. Surge

E. All correct

Answer: Option C

11. (solve as per the direction given above)

A. Boundary

B. Exhibit

C. Depresion

D. Demonstration

E. All correct

Answer: Option C

12. (solve as per the direction given above)

A. Logical

B. Ludicrucous

C. Lovely

D. Lonesome

E. All correct

Answer: Option B

13. (solve as per the direction given above)

A. Periphery

B. Advurtise

C. Courteous

D. Indefinite

E. All correct

Answer: Option B

14. (solve as per the direction given above)

A. Dismiss

B. Dispel

C. Disservice

D. Discribe

E. All correct

Answer: Option D

15. (solve as per the direction given above)

A. Period

B. Saggest

C. Famous

D. Reference

E. All correct

Answer: Option B

16. (solve as per the direction given above)

A. Formulate

B. Formidable

C. Forman

D. Format

E. All correct

Answer: Option C

17. (solve as per the direction given above)

A. Aristocracy

B. Prophecy

C. Beaureacuracy

D. Democracy

E. All correct

Answer: Option C

18. (solve as per the direction given above)

A. Artificial

B. Aggrevate

C. Forefront

D. Negligence

E. All correct

Answer: Option B

19. (solve as per the direction given above)

A. Benificial

B. Regular

C. Despise

D. Deprave

E. All correct

Answer: Option A

20. (solve as per the direction given above)

A. Psychologist

B. Psychaitrist

C. Physiologist

D. Psychoanalyst

E. All correct

Answer: Option B

21. (solve as per the direction given above)

A. Conserve

B. Reserve

C. Diserve

D. Preserve

E. All correct

Answer: Option C

22. (solve as per the direction given above)

A. Filled

B. Fulfiled

C. Expelled

D. Skilled

E. All correct

Answer: Option B

23. (solve as per the direction given above)

A. Seperation

B. Desertion

C. Rejoice

D. Serenity

E. All correct

Answer: Option A

24. (solve as per the direction given above)

A. Transmit

B. Attribute

C. Constitute

D. Investegate

E. All correct

Answer: Option D

25. (solve as per the direction given above)

A. Peaceful

B. Skillful

C. Beautyful

D. Hopeful

E. All correct

Answer: Option C

26. (solve as per the direction given above)

A. Numerous

B. Nucleus

C. Nuisence

D. Numismatics

E. All correct

Answer: Option C

27. (solve as per the direction given above)

A. Choclate

B. Woolen

C. Parliament

D. Biscuit

E. All correct

Answer: Option A

28. (solve as per the direction given above)

A. Grammer

B. Hammer

C. Manner

D. Stammer

E. All correct

Answer: Option A

29. (solve as per the direction given above)
A. Deploy
B. Emply
C. Supply
D. Reply
E. All correct
Answer: Option B

30. (solve as per the direction given above)
A. Approach
B. Compartment
C. Restaurant
D. Municipality
E. All correct
Answer: Option E

31. (solve as per the direction given above)
A. Irritate
B. Turmoil
C. Ignorent
D. Terrible
E. All correct
Answer: Option C

32. (solve as per the direction given above)
A. Intellectual
B. Opportunity
C. Efficiency
D. Responsibility
E. All correct
Answer: Option E

33. (solve as per the direction given above)
A. Narrator
B. Overseer
C. Pretence
D. Licence
E. All correct
Answer: Option E

34. (solve as per the direction given above)
A. Burglar
B. Designation
C. Controversy
D. Ratificasion
E. All correct
Answer: Option D

35. (solve as per the direction given above)
A. Leisure
B. Nuisance
C. Opineon
D. Mystery
E. All correct
Answer: Option C

36. (solve as per the direction given above)
A. Differed
B. Suffered
C. Offered
D. Reffered
E. All correct
Answer: Option D

37. (solve as per the direction given above)
A. Permission
B. Ambition
C. Admision
D. Submission
E. All correct
Answer: Option C

38. (solve as per the direction given above)
A. Collision
B. Superstition
C. Conversation
D. Humilation
E. All correct
Answer: Option D

39. (solve as per the direction given above)
A. Gentalman
B. Criticise
C. Valuable

D. Continuous

E. All correct

Answer: Option A

40. (solve as per the direction given above)

A. Punctuation

B. Fashion

C. Pention

D. Ration

E. All correct

Answer: Option C

Section 3

1. (solve as per the direction given above)

A. They were quiet

B. amazed at the

C. turn of

D. events.

E. All correct

Answer: Option A

2. (solve as per the direction given above)

A. He was invited

B. to attend the

C. inaugural of the all party

D. meat

E. All correct

Answer: Option D

3. (solve as per the direction given above)

A. The religious leaders

B. attained all the

C. ceremonies of other

D. creeds

E. All correct

Answer: Option B

4. (solve as per the direction given above)

A. Religious people are

B. afraid of

C. sinful

D. actions

E. All correct

Answer: Option E

5. (solve as per the direction given above)

A. I ordered him to keep quite

B. but he disobeyed

C. and continued

D. shouting

E. All correct

Answer: Option A

6. (solve as per the direction given above)

A. When none of the advocates

B. accepted

C. his offer

D. he appologised them

E. All correct

Answer: Option D

7. (solve as per the direction given above)

A. Social security

B. and poverty alleviation

C. programmes are not implimented

D. with required seriousness

E. All correct

Answer: Option C

8. (solve as per the direction given above)

A. Many legends

B. superstitions endow the moon with a beauty and

C. mistery which will

D. linger for countless years

E. All correct

Answer: Option C

9. (solve as per the direction given above)

A. One should be able for

B. differentiate between what is

C. desirable and

D. what is not

E. All correct

Answer: Option A

10. (solve as per the direction given above)

A. The notorious

B. bandit

C. poisoned the guard and made a

D. miraculous escape

E. All correct

Answer: Option E

11. (solve as per the direction given above)

A. The non-availability

B. of unprocessed natural

C. resources in a country should not be the

D. basic for rejecting that possibility of export industry

E. All correct

Answer: Option D

12. (solve as per the direction given above)

A. His decision was based on

B. adequate and

C. acurate

D. information

E. All correct

Answer: Option C

13. (solve as per the direction given above)

A. He had experienced

B. a purposefully

C. discussion on topics of our

D. interest

E. All correct

Answer: Option B

14. (solve as per the direction given above)

A. A monstrous

B. snake came up the

C. hollow

D. trunk of tree

E. All correct

Answer: Option E

15. (solve as per the direction given above)

A. Justice is an enforceable

B. public virtue, stronger in

C. obligatory than such private virtues as friendship

D. charity and

E. generosity.

Answer: Option C

16. (solve as per the direction given above)

A. When I heard

B. his vice

C. I could not respond

D. quickly

E. All correct

Answer: Option B

17. (solve as per the direction given above)

A. They appreciated

B. his wholehurted

C. contribution

D. to the social cause

E. All correct

Answer: Option B

18. (solve as per the direction given above)

A. The attractive

B. scene painted by him

C. fetched the first

D. price

E. All correct

Answer: Option D

19. (solve as per the direction given above)

A. Our college principle

B. never accepts

C. any donation

D. from people with meagre resources

E. All correct

Answer: Option A

20. (solve as per the direction given above)

A. Stereotypes

B. are dysfunctional

C. in projecting

D. an image of an unbiased individual

E. All correct

Answer: Option E

21. (solve as per the direction given above)

A. He is a man of amiable

B. disposition

C. and emenable

D. to rule and discipline

E. All correct

Answer: Option C

22. (solve as per the direction given above)

A. He was very kin

B. to process all the

C. available

D. information

E. All correct

Answer: Option A

23. (solve as per the direction given above)

A. People in our country are distressed

B. by the spate of strikes, an almost

C. perpetual go slow and

D. increadibily low productivity

E. All correct

Answer: Option D

24. (solve as per the direction given above)

A. He was polite

B. but ferm in his

C. dealings with the

D. foreigners

E. All correct

Answer: Option B

25. (solve as per the direction given above)

A. The funeral

B. was plain and ostentatious

C. It differed

D. in nothing from the ordinery

E. All correct

Answer: Option D

26. (solve as per the direction given above)

A. The faces of the

B. twins were so

C. identical that we could not

D. differentiate between them

E. All correct

Answer: Option C

27. (solve as per the direction given above)

A. scents have

B. utter

C. disregard for wealth and worldly matters

D. trunk of tree

E. All correct

Answer: Option A

28. (solve as per the direction given above)

A. The philosophers

B. believe that by making men see

C. reason through argument, society would be changed and human behaviour

D. improvd

E. All correct

Answer: Option D

29. (solve as per the direction given above)

A. stationary

B. items go into an inventory

C. assiduously

D. prepared

E. All correct

Answer: Option A

30. (solve as per the direction given above)

A. They cannot buy

B. certain

C. medicines which are extremely

D. expensive

E. All correct

Answer: Option E

31. (solve as per the direction given above)

A. The faster

B. he adjust to a novel situation

C. the soon

D. will he be rewarded

E. All correct

Answer: Option C

32. (solve as per the direction given above)

A. To solve a

B. problem, one needs to have

C. intelligent and firm

D. determination

E. All correct

Answer: Option C

33. (solve as per the direction given above)

A. People take undue

B. advantage of his

C. simplicity and

D. chit him

E. All correct

Answer: Option D

34. (solve as per the direction given above)

A. The conclusion

B. was incorrect because it was

C. drowned on incomplete

D. date

E. All correct

Answer: Option C

35. (solve as per the direction given above)

A. They excepted

B. our suggestion and

C. transformed it into

D. practice

E. All correct

Answer: Option A

Sentence Correction

1. The small child does whatever his father was done.

A. has done

B. did

C. does

D. had done

E. No correction required

Answer: Option C

2. You need not come unless you want to.

A. You don't need to come unless you want to

B. You come only when you want to

C. You come unless you don't want to

D. You needn't come until you don't want to

E. No correction required

Answer: Option A

3. There are not many men who are so famous that they are frequently referred to by their short names only

A. initials

B. signatures

C. pictures

D. middle names

E. No correction required

Answer: Option A

4. The man to who I sold my house was a cheat.

A. to whom I sell

B. to who I sell

C. who was sold to

D. to whom I sold

E. No correction required

Answer: Option D

5. They were all shocked at his failure in the competition.
A. were shocked at all
B. had all shocked at
C. had all shocked by
D. had been all shocked on
E. No correction required
Answer: Option E

6. I need not offer any explanation regarding this incident - my behaviour is speaking itself.
A. will speak to itself
B. speaks for itself
C. has been speaking
D. speaks about itself
E. No correction required
Answer: Option B

7. He is too important for tolerating any delay.
A. to tolerate
B. to tolerating
C. at tolerating
D. with tolerating
E. No correction required
Answer: Option A

8. The population of Tokyo is greater than that of any other town in the worlD.
A. greatest among any other
B. greater than all other
C. greater than those of any other
D. greater than any other
E. No correction required
Answer: Option E

9. The performance of our players was rather worst than I had expected.
A. bad as I had expected
B. worse than I had expected
C. worse than expectation
D. worst than was expected
E. No correction required
Answer: Option B

10. Why did you not threw the bag away?
A. did you not throw
B. had you not threw
C. did you not thrown
D. you did not thrown
E. No correction required
Answer: Option A

11. Shapes of gods and goddess are worshipped by peoplE.
A. Images
B. Reflections
C. Clay shapes
D. Clay toys
E. No correction required
Answer: Option A

12. In addition to enhanced their reputations through strategic use of philanthropy, companies are sponsoring social initiatives to open new markets.
A. of enhancing their reputation
B. to having enhance their reputation
C. to enhancing their reputation
D. to have their reputation enhancing
E. No correction required
Answer: Option C

13. The intruder stood quietly for few moments
A. for few time
B. for the few moments
C. for moments
D. for a few moments
E. No correction required
Answer: Option D

14. The police has so far succeeded in recovering only a part of the stolen property.
A. thus far succeeded for recovery
B. so far succeeded in recovery of
C. as for as succeeded in recovery of
D. so far succeeded to recover
E. No correction required
Answer: Option E

15. He confidentially asked the crowd if they thought he was right and the crowd shouted that they diD.
A. that he did
B. that they had
C. that he is
D. that he didn't
E. No correction required
Answer: Option E

16. Why should the candidates be afraid of English Language is not clear.
A. the candidates should be
B. do the candidates be
C. should be the candidates
D. are the candidates
E. No correction required
Answer: Option A

17. He found the gold coin as he cleans the floor.
A. as he had cleaned
B. while he cleans
C. which he is cleaning
D. while cleaning
E. No correction required
Answer: Option D

18. He admired the speed with which he completed the work and appreciating the method adopted by him
A. appreciate the method being adopted
B. appreciated the method adopted
C. appreciate the method of adoption
D. appreciated the method adopting method
E. No correction required
Answer: Option B

19. Maria unnecessarily picked up a quarrel with Rani and left the party hurrieD.
A. has picked up
B. picked on
C. picked
D. picking up
E. No correction required
Answer: Option C

20. She cooks, washes dishes, does her homework and then relaxing.
A. relaxing then
B. then is relaxing
C. relaxing is then
D. then relaxes
E. No correction required
Answer: Option D

21. Acquisition of certain specific skills can be facilitated from general awareness, education to novel situations
A. can be facilitated by
B. may facilitate through
C. can be felicitated with
D. may be felicitated with
E. No correction required
Answer: Option A

22. He never has and ever will take such strong measures.
A. had taken nor will ever take
B. had taken and will ever take
C. has and never will take

D. had and ever will take

E. No correction required

Answer: Option A

23. Technology must use to feed the forces of changE.

A. must be used to feed

B. must have been using to feed

C. must use having fed

D. must be using to feed

E. No correction required

Answer: Option A

24. Anyone interested in the use of computers can learn much if you have access to a personal computer.

A. they have access

B. access can be available

C. he or she has access

D. one of them have access

E. No correction required

Answer: Option C

25. They are not beware of all the facts

A. are not aware for

B. are not aware of

C. are not to be aware

D. must not to be aware for

E. No correction required

Answer: Option B

26. We can not always convey ourselves in simple sentences.

A. cannot always convey

B. can not always express

C. cannot always express

D. can not always communicate

E. No correction required

Answer: Option C

27. What does agonise me most is not this criticism, but the trivial reason behind it.

A. most agonising me

B. agonises me most

C. agonising me most

D. I most agonised

E. No correction required

Answer: Option B

28. As there was no time, the remaining items were deferred into the next meeting.

A. are deferred till

B. were deferred till

C. were deferred to

D. had deferred with

E. No correction required

Answer: Option B

29. Despite of their differences on matters of principles, they all agree on the demand of hike is salary?

A. Despite their

B. Despite of the

C. Despite for their

D. Despite off their

E. No correction required

Answer: Option A

30. The man who has committed such a serious crime must get the mostly severe punishment.

A. be getting the mostly severely

B. get the most severe

C. have got the most severely

D. have been getting the severe most

E. No correction required

Answer: Option B

31. For many centuries in Indian History there was no city so famous like the city of Ujjain.

A. as

B. such as

C. likewise

D. so like

E. No correction required

Answer: Option A

32. We don't know how did the thief made an escapE.

A. how the thief did make

B. how the thief does make

C. how the thief made

D. how was the thief made

E. No correction required

Answer: Option C

33. He is a singer of repute, but his yesterday's performance was quite disappointing.

A. performances of yesterday were

B. yesterday performance was

C. yesterday performance were

D. performances about yesterday were

E. No correction required

Answer: Option E

34. Their earnings are such that they find it difficult to make both ends to meet.

A. to makings both ends meet

B. to make both ends for meeting

C. to make both ends meet

D. for making both ends to meet

E. No correction required

Answer: Option C

35. He has received no other message than an urgent telegram asking him to rush his village immediately.

A. asked him to rush his village

B. asking him to have rush his village

C. asking him to rush to his village

D. asking him rushing at his village

E. No correction required

Answer: Option C

36. One of the most significant phenomenons of our time has been the development of cinemA.

A. phenomenon

B. phenomena

C. phenomenonna

D. phenomenonns

E. No correction required

Answer: Option B

37. Had you been told me about your problem, I would have helped you.

A. If you would have told

B. Had you have told

C. had you told

D. If you have told

E. No correction required

Answer: Option C

38. It was until many years later that Gandhi became a rebel against authority.

A. It was not until many years

B. It was till many years

C. It was not many years

D. Until It was many years

E. No correction required

Answer: Option A

39. Anand has the guts to rise from the occasion and come out successfully.

A. in rising from

B. to raise with

C. to rise to

D. to rise against

E. No correction required

Answer: Option C

40. If you are thinking about investigation overseas, isn't it makes sense to find an experience guide?

A. it is not making

B. doesn't it make

C. does it make

D. is it making

E. No correction required

Answer: Option B

41. This is one of the most important inventions of this century.

A. invention of this century

B. invention of these century

C. invention of centuries

D. invention of the centuries

E. No correction required

Answer: Option E

42. The orator had been left the auditorium before the audience stood up.

A. had been leaving

B. was left

C. had left

D. would leave

E. No correction required

Answer: Option C

43. He dislikes the word dislike, isn't he

A. didn't he

B. doesn't he

C. hasn't he

D. does he

E. No correction required

Answer: Option B

44. We must take it granted that Madhu will not come for today's function.

A. take it for granted

B. taking it granted

C. took it as granted

D. have it granted

E. No correction required

Answer: Option A

45. The research study is an eye-opener and attempts to acquaint us with the problems of poor nations.

A. attempted to acquaint

B. attempts at acquainting

C. attempt to acquaint

D. attempting to acquaint

E. No correction required

Answer: Option B

46. It was unanimously resolved that the parties should unitedly undertook launching of popular programmes.

A. should be united undertook

B. should be unitedly undertaken

C. should be unitedly undertake

D. should unitedly undertake

E. No correction required

Answer: Option D

47. They continued to work in the field despite of the heavy rains.

A. even though there is heavy rain

B. although heavily rains

C. in spite the heavy rains

D. even though it rained heavily

E. No correction required

Answer: Option D

48. It is always better to make people realise the importance of discipline than to impose them on it.

A. impose it with them

B. impose them with it

C. imposing them on it

D. impose it on them

E. No correction required

Answer: Option D

49. My doctor knew that I would eventually recover and do kind of work I would be doing before

A. would have been doing

B. would have done

C. had been done

D. had been doing

E. No correction required

Answer: Option D

50. Later he became unpopular because he tried to lord it on his followers.

A. to lord it for

B. to lord over

C. to lord it over

D. to lord it over on

E. No correction required

Answer: Option C

51. The crops are dying; it must not had raineD.

A. must had not

B. must not be

C. must not have

D. must not have been

E. No correction required

Answer: Option C

52. The courts are actively to safeguard the interests and the rights of the poor.

A. are actively to safeguarding

B. have been actively safeguarding

C. have to active in safeguarding

D. are actively in safeguarding

E. No correction required

Answer: Option B

53. The drama had many scenes which were so humorous that it was hardly possible to keep a straight facE.

A. hardly possible for keeping

B. hardly impossible for keeping

C. hardly impossible for keep

D. hardly possible keeping

E. No correction required

Answer: Option E

54. Hardly does the sun rise when the stars disappeareD.

A. have the sun rose

B. had the sun risen

C. did the sun rose

D. the sun rose

E. No correction required

Answer: Option B

55. You will be late if you do not leave now

A. did not leave

B. left

C. will not leave

D. do not happen to leave

E. No correction required

Answer: Option E

56. The train will leave at 8.30 pm, we have been ready by 7.30pm so that, we can reach the station in timE.

A. were

B. must be

C. are

D. should have

E. No correction required

Answer: Option B

57. All the allegations levelled against him were found to be baseless.

A. level against

B. level with

C. levelling with

D. levelled for

E. No correction required

Answer: Option E

58. Ramesh is as tall if not, taller than Mahesh.

A. not as tall but

B. not so tall but as

C. as tall as, if not

D. as if not

E. No correction required

Answer: Option C

59. He hesitated to listen to what his brother was saying.

A. listened to hesitate

B. hesitated listen to

C. hesitates to listening

D. is hesitated to listen to

E. No correction required

Answer: Option E

60. The prosecution failed in establish in every case today.

A. to

B. on

C. as

D. upon

E. No correction required

Answer: Option A

61. One of my drawbacks is that I do not have to tolerance of ambiguity.

A. do not have

B. cannot have

C. am not

D. did not have to

E. No correction required

Answer: Option A

62. They should have calmly thought of the advantages that would accrue to them.

A. should have been calm in thinking about

B. should be calmly thought of

C. shall have to calmly thought of

D. should have calmly think of

E. No correction required

Answer: Option E

63. The easiest of the thing to do is to ask the address to the postman.

A. of the things to do

B. among the things did

C. of the thing to be done

D. of all the things done

E. No correction required

Answer: Option A

64. We demonstrated to them how we were prepared the artistic patterns.

A. are prepared

B. have prepared

C. are preparing

D. had prepared

E. No correction required

Answer: Option D

65. Because of his mastery in this field, his suggestions are wide accepteD.

A. are widely accepted

B. widely acceptance

C. have widely accepted

D. have been wide accepted

E. No correction required

Answer: Option A

66. They felt humiliated because they realised that they had cheateD.

A. have been cheated

B. had been cheated

C. had been cheating

D. were to be cheated

E. No correction required

Answer: Option B

67. Tax evaders should heavily punished as they do it intentionally.

A. should be heavy fined

B. should have heavily fined

C. shall have heavy fine

D. should be heavily fined

E. No correction required

Answer: Option D

68. We met him immediately after the session in which he had been given a nice speech.

A. would be giving

B. has been given

C. will have given

D. had given

E. No correction required

Answer: Option D

69. For some days the new professor lectured above the heads of his pupils.

A. over the head of

B. over the heads of

C. on the heads of

D. through the heds of

E. No correction required

Answer: Option B

70. The accused now flatly denies have admitted his guilt in his first statement.

A. having admitted

B. had admitted

C. have been admitting

D. has admitting

E. No correction required

Answer: Option A

71. We were still standing in the queue when the film was beginning.

A. film began

B. film had begun

C. beginning of the film was over

D. film begins

E. No correction required

Answer: Option B

72. If I would have realised the nature of job earlier, I would not have accepted it.

A. If I have had

B. In case I would have

C. Had I been

D. Had I

E. No correction required

Answer: Option A

73. The crime has growth rapidly in Russia since the disintegration of the communist system.

A. rapid crime has grown

B. crime has grown rapidly

C. crimes grow rapidly

D. crimes have been rapidly grown

E. No correction required

Answer: Option B

74. They failed in their attempt to repair the demolished portion of that building.

A. for their attempt to repair

B. in their attempting to repair

C. with their attempt to repair

D. in their attempt for repairs

E. No correction required

Answer: Option E

75. I earnestly believe that you will visit our relatives during your forthcoming trip to Mumbai.

A. had hardly believe that

B. sincerely would believe

C. certainly believing that

D. could not believe

E. No correction required

Answer: Option E

76. By such time you finish that chapter, I will write a letter.
A. The time when
B. By the time
C. By that time
D. The time
E. No correction required
Answer: Option B

77. Though we have kept in mind to try and maintain most facilities, we would like to request you to kindly bear with us any inconvenience that may be causeD.
A. must keep in mind to try and maintain
B. have kept in mind trying and maintain
C. would keep in mind to try and to maintain
D. should have kept in mind to try and to maintain
E. No correction required
Answer: Option E

78. The tea-estate administration is in such mess there is no leader to set the things right.
A. in such a mess here
B. in a such mess that here
C. in such a mess that there
D. with such a mess that there
E. No correction required
Answer: Option C

79. They examined both the samples very carefully but failed to detect any difference in them.
A. some difference in
B. some difference between
C. any difference between
D. any difference among
E. No correction required

Answer: Option C

80. "Friends and comrades, the light has gone away from our lives and there is darkness everywhere"
A. off
B. out of
C. out from
D. out off
E. No correction required
Answer: Option B

81. Because of his ill health, the doctor has advised him not to refrain from smoking.
A. to not refrain from
B. to resort to
C. to refrain from
D. to be refrained from
E. No correction required
Answer: Option C

82. They have a scheme of rewarding the best of the performers every year.
A. a best performer
B. the best among the performer
C. a best among performer
D. the best of the performer
E. No correction required
Answer: Option E

83. What happens to all those travellers on the ship was not known?
A. What happened of
B. What happened in
C. What is that happens to
D. What happened to
E. No correction required
Answer: Option D

84. Making friends is more rewarding than to make enemies.
A. to be unsociable

B. to be sociable

C. being unsociable

D. making enemies

E. No correction required

Answer: Option D

85. The moment they saw me, they were delight

A. had delighted

B. were delighted

C. are delighted

D. have been delighted

E. No correction required

Answer: Option B

86. He should not had done it.

A. had not

B. should had not

C. should not have

D. should have

E. No correction required

Answer: Option C

87. No sooner do the bells ring than the curtain rosE.

A. did the bell ring

B. did the bells ring

C. had the bell rang

D. had the bell rung

E. No correction required

Answer: Option B

88. The moment the manager came to know fraudulent action of his assistant, he order immediately dismissed him.

A. immediately ordered his dismissed

B. ordered his immediate dismissal

C. immediately order dismissal of his

D. ordered for immediately dismissal of him

E. No correction required

Answer: Option B

89. The meeting was attended to by all invitees.

A. all attended to by

B. attended by all

C. fully attended to by

D. like attending to all

E. No correction required

Answer: Option B

90. If he has to spend five hours in the queue, it was really a wastagE.

A. is a really wastage

B. is real a wastage

C. has really a wastage

D. is really a wastage

E. No correction required

Answer: Option D

91. The world has seen small real attempt at population and resource planning.

A. few

B. little

C. less

D. a few

E. No correction required

Answer: Option B

92. My hair stood off ends when I saw the horrible sight.

A. stood at ends

B. stood on ends

C. stood to ends

D. stands on ends

E. No correction required

Answer: Option B

93. The long or short of it is that I do not want to deal with that new firm.

A. The long and short of it

B. The long and short for it

C. The long or short for it

D. The shot and long for it

E. No correction required

Answer: Option A

94. Can you tell me why did you not speak the truth?

A. why did not you speak

B. that why did you not speak

C. why you did not speak

D. why did you not spoke

E. No correction required

Answer: Option C

95. The people generally try to curry favour with the corrupt but influential person.

A. cook favour

B. seek favour

C. extract favour

D. display favour

E. No correction required

Answer: Option E

96. I have got some tea, but I do not have a sugar.

A. some

B. got

C. more

D. any

E. No correction required

Answer: Option D

97. Had I realised how close I was to the edge of the valley, I would not have carried the bags therE.

A. Had I been realised

B. If I would have realised

C. When I realised

D. Had I had realised

E. No correction required

Answer: Option E

98. Most of the Indian workers are as healthy as, if not healthier than, British workers.

A. as if healthy as not healthier

B. healthier but not as healthy

C. as healthy, if not healthier

D. so healthy, if not healthier

E. No correction required

Answer: Option E

Part-1

1. UNIVAC is
A) Universal Automatic Computer
B) Universal Array Computer
C) Unique Automatic Computer
D) Unvalued Automatic Computer

2. The basic operations performed by a computer are
A) Arithmetic operation
B) Logical operation
C) Storage and relative
D) All the above

3. The two major types of computer chips are
A) External memory chip
B) Primary memory chip
C) Microprocessor chip
D) Both b and c

4. Microprocessors as switching devices are for which generation computers
A) First Generation
B) Second Generation
C) Third Generation
D) Fourth Generation

5. What is the main difference between a mainframe and a super computer?
A) Super computer is much larger than mainframe computers
B) Super computers are much smaller than mainframe computers
C) Supercomputers are focused to execute few programs as fast as possible while mainframe uses its power to execute as many programs concurrently
D) Supercomputers are focused to execute as many programs as possible while mainframe uses its power to execute few programs as fast as possible.

6. ASCII and EBCDIC are the popular character coding systems. What does EBCDIC stand for?
A) Extended Binary Coded Decimal Interchange Code
B) Extended Bit Code Decimal Interchange Code
C) Extended Bit Case Decimal Interchange Code
D) Extended Binary Case Decimal Interchange Code

7. The brain of any computer system is
A) ALU
B) Memory
C) CPU
D) Control unit

8. Storage capacity of magnetic disk depends on
A) tracks per inch of surface
B) bits per inch of tracks
C) disk pack in disk surface
D) All of above

9. The two kinds of main memory are:
A) Primary and secondary
B) Random and sequential
C) ROM and RAM
D) All of above

10. A storage area used to store data to a compensate for the difference in speed at which the different units can handle data is
A) Memory
B) Buffer
C) Accumulator
D) Address

11. Computer is free from tiresome and boardoom. We call it

A) Accuracy

B) Reliability

C) Diligence

D) Versatility

12. Integrated Circuits (Ics) are related to which generation of computers?

A) First generation

B) Second generation

C) Third generation

D) Fourth generation

13. CD-ROM is a

A) Semiconductor memory

B) Memory register

C) Magnetic memory

D) None of above

14. A hybrid computer

A) Resembles digital computer

B) Resembles analogue computer

C) Resembles both a digital and analogue computer

D) None of the above

15. Which type of computers uses the 8-bit code called EBCDIC?

A) Minicomputers

B) Microcomputers

C) Mainframe computers

D) Super computer

16. The ALU of a computer responds to the commands coming from

A) Primary memory

B) Control section

C) External memory

D) Cache memory

17. Chief component of first generation computer was

A) Transistors

B) Vacuum Tubes and Valves

C) Integrated Circuits

D) None of above

18. To produce high quality graphics (hardcopy) in color, you would want to use a/n

A) RGB monitor

B) Plotter

C) Ink-jet printer

D) Laser printer

19. What are the stages in the compilation process?

A) Feasibility study, system design and testing

B) Implementation and documentation

C) Lexical Analysis, syntax analysis, and code generation

D) None of the above

20. Which of the following IC was used in third generation of computers?

A) SSI

B) MSI

C) LSI

D) Both a and b

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21. The main electronic component used in first generation computers was

A) Transistors

B) Vacuum Tubes and Valves

C) Integrated Circuits

D) None of above

22. A dumb terminal has

A) an embedded microprocessor

B) extensive memory

C) independent processing capability

D) a keyboard and screen

23. One millisecond is

A) 1 second

B) 10th of a seconds

C) 1000th of a seconds

D) 10000th of a seconds

24. The output quality of a printer is measured by

A) Dot per sq. inch

B) Dot per inch

C) Dots printed per unit time

D) All of the above

25. Which of the following was a special purpose computer?

A) ABC

B) ENIAC

C) EDVAC

D) All of the above

26. What was the computer invented by Attanasoff and Clifford?

A) Mark I

B) ABC

C) Z3

D) None of above

27. Which of the following storage devices can store maximum amount of data?

A) Floppy Disk

B) Hard Disk

C) Compact Disk

D) Magneto Optic Disk

28. Which computer was considered the first electronic computer until 1973 when court invalidated the patent?

A) ENIAC

B) MARK I

C) Z3

D) ABC

29. A physical connection between the microprocessor memory and other parts of the microcomputer is known as

A) Path

B) Address bus

C) Route

D) All of the above

30. High density double sided floppy disks could store _____ of data

A) 1.40 MB

B) 1.44 GB

C) 1.40 GB

D) 1.44 MB

31. A high quality CAD system uses the following for printing drawing and graphs

A) Dot matrix printer

B) Digital plotter

C) Line printer

D) All of the above

32. Which of the following is not an input device?

A) OCR

B) Optical scanners

C) Voice recognition device

D) COM (Computer Output to Microfilm)

33. The accuracy of the floating-point numbers representable in two 16-bit words of a computer is approximately

A) 16 digits

B) 6 digits

C) 9 digits

D) All of above

34. In most of the IBM PCs, the CPU, the device drivers, memory, expansion slots and active components are mounted on a single board. What is the name of the board?
A) Motherboard
B) Daughterboard
C) Bredboard
D) Fatherboard

35. In most IBM PCs, the CPU, the device drives, memory expansion slots and active components are mounted on a single board. What is the name of this board?
A) Motherboard
B) Breadboard
C) Daughter board
D) Grandmother board

36. Magnetic disks are the most popular medium for
A) Direct access
B) Sequential access
C) Both of above
D) None of above

37. A technique used by codes to convert an analog signal into a digital bit stream is known as
A) Pulse code modulation
B) Pulse stretcher
C) Query processing
D) Queue management

38. Regarding a VDU, Which statement is more correct?
A) It is an output device
B) It is an input device
C) It is a peripheral device
D) It is hardware item

39. A modern electronic computer is a machine that is meant for
A) Doing quick mathematical calculations
B) Input, storage, manipulation and outputting of data
C) Electronic data processing
D) Performing repetitive tasks accurately

40. When was vacuum tube invented?
A) 1900
B) 1906
C) 1910
D) 1880

41. Which of the following produces the best quality graphics reproduction?
A) Laser printer
B) Ink jet printer
C) Plotter
D) Dot matrix printer

42. Computers with 80286 microprocessor is
A) XT computer
B) AT comptuers
C) PS/2 computer
D) None of above

43. An application suitable for sequential processing is
A) Processing of grades
B) Payroll processing
C) Both a and b
D) All of above

44. Which of the following is not processing?
A) arranging
B) manipulating
C) calculating
D) gathering

45. The digital computer was developed primarily in
A) USSR
B) Japan
C) USA
D) UK

46. Software in computer
A) Enhances the capabilities of the hardware machine
B) Increase the speed of central processing unit
C) Both of above
D) None of above

47. Today's computer giant IBM was earlier known by different name which was changes in 1924. What was that name?
A) Tabulator Machine Co.
B) Computing Tabulating Recording Co.
C) The Tabulator Ltd.
D) International Computer Ltd.

48. Before a disk drive can access any sector record, a computer program has to provide the record's disk address. What information does this address specify?
A) Track number
B) Sector number
C) Surface number
D) All of above

49. The arranging of data in a logical sequence is called
A) Sorting
B) Classifying
C) Reproducing
D) Summarizing

50. What is the responsibility of the logical unit in the CPU of a computer?
A) To produce result

B) To compare numbers
C) To control flow of information
D) To do math's works

51. Abacus was the first
A) electronic computer
B) mechanical computer
C) electronic calculator
D) mechanical calculator

52. If in a computer, 16 bits are used to specify address in a RAM, the number of addresses will be
A) 216
B) 65,536
C) 64K
D) Any of the above

53. Instructions and memory address are represented by
A) Character code
B) Binary codes
C) Binary word
D) Parity bit

54. The terminal device that functions as a cash register, computer terminal, and OCR reader is the:
A) Data collection terminal
B) OCR register terminal
C) Video Display terminal
D) POS terminal

55. A set of flip flops integrated together is called ____
A) Counter
B) Adder
C) Register
D) None of the above

56. People often call _____ as the brain of computer system
A) Control Unit

B) Arithmetic Logic Unit

C) Central Processing Unit

D) Storage Unit

57. Which is used for manufacturing chips?

A) Bus

B) Control unit

C) Semiconductors

D) A and b only

58. The value of each bead in heaven is

A) 1

B) 3

C) 5

D) 7

59. The first computer introduced in Nepal was

A) IBM 1400

B) IBM 1401

C) IBM 1402

D) IBM1402

60. Mnemonic a memory trick is used in which of the following language?

A) Machine language

B) Assembly language

C) High level language

D) None of above

61. Instruction in computer languages consists of

A) OPCODE

B) OPERAND

C) Both of above

D) None of above

62. Which generation of computer is still under development

A) Fourth Generation

B) Fifth Generation

C) Sixth Generation

D) Seventh Generation

63. A register organized to allow to move left or right operations is called a _____

A) Counter

B) Loader

C) Adder

D) Shift register

64. Which was the most popular first generation computer?

A) IBM 1650

B) IBM 360

C) IBM 1130

D) IBM 2700

65. Which is considered a direct entry input device?

A) Optical scanner

B) Mouse and digitizer

C) Light pen

D) All of the above

66. A set of information that defines the status of resources allocated to a process is

A) Process control

B) ALU

C) Register Unit

D) Process description

67. Each set of Napier's bones consisted of _____ rods.

A) 5

B) 9

C) 11

D) 13

68. BCD is

A) Binary Coded Decimal

B) Bit Coded Decimal

C) Binary Coded Digit

D) Bit Coded Digit

69. When was the world's first laptop computer introduced in the market and by whom?
A) Hewlett-Packard, 1980
B) Epson, 1981
C) Laplink Traveling Software Inc, 1982
D) Tandy Model-200, 1985

70. From which generation operating systems were developed?
A) First
B) Second
C) Third
D) Fourth

71. The first firm to mass-market a microcomputer as a personal computer was
A) IBM
B) Super UNIVAC
C) Radio Shaks
D) Data General Corporation

72. How many address lines are needed to address each machine location in a 2048 x 4 memory chip?
A) 10
B) 11
C) 8
D) 12

73. Properly arranged data is called
A) Field
B) Words
C) Information
D) File

74. A computer consists of
A) A central processing unit
B) A memory
C) Input and output unit
D) All of the above

75. Why are vacuum tubes also called valves?
A) Because they can amplify the weak signals and make them strong
B) Because they can stop or allow the flow of current
C) Both of above
D) None of above

76. John Napier invented Logarithm in
A) 1614
B) 1617
C) 1620
D) None of above

77. An integrated circuit is
A) A complicated circuit
B) An integrating device
C) Much costlier than a single transistor
D) Fabricated on a tiny silicon chip

78. What type of control pins are needed in a microprocessor to regulate traffic on the bus, in order to prevent two devices from trying to use it at the same time?
A) Bus control
B) Interrupts
C) Bus arbitration
D) Status

79. Where as a computer mouse moves over the table surface, the trackball is
A) Stationary
B) Difficult to move
C) Dragged
D) Moved in small steps

80. Which of the following is used as a primary storage device?
A) Magnetic drum
B) Hard Disks
C) Floppy

D) All of above

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81. Multi user systems provided cost savings for small business because they use a single processing unit to link several

A) Personal computers

B) Workstations

C) Dumb terminals

D) Mainframes

82. What are the three decisions making operations performed by the ALU of a computer?

A) Grater than

B) Less than

C) Equal to

D) All of the above

83. The word processing task associated with changing the appearance of a document is

A) Editing

B) Writing

C) Formatting

D) All of above

84. Nepal brought a computer for census of 2028 BS. This computer was of

A) first generation

B) second generation

C) third generation

D) fourth generation

85. Algorithm and Flow chart help us to

A) Know the memory capacity

B) Identify the base of a number system

C) Direct the output to a printer

D) Specify the problem completely and clearly

86. Which statement is valid about computer program?

A) It is understood by a computer

B) It is understood by programmer

C) It is understood user

D) Both a & b

87. The difference between memory and storage is that memory is _____ and storage is __

A) Temporary, permanent

B) Permanent, temporary

C) Slow, fast

D) All of above

88. When was Pascaline invented?

A) 1617

B) 1620

C) 1642

D) 1837

89. Which of the following statement is valid?

A) Lady Augusta is the first programmer

B) Ada is the daughter of Lord Byron, a famous English poet

C) ADA is a programming language developed by US Defense

D) All of above

90. A compiler is a translating program which

A) Translates instruction of a high level language into machine language

B) Translates entire source program into machine language program

C) It is not involved in program's execution

D) All of above

91. What is required when more than one person uses a central computer at the same time?
A) Light pen
B) Mouse
C) Digitizer
D) Terminal

92. Which of the following is the first computer to use Stored Program Concept?
A) UNIVAC
B) ENIAC
C) EDSAC
D) None of above

93. The term gigabyte refers to
A) 1024 bytes
B) 1024 kilobytes
C) 1024 megabytes
D) 1024 gigabyte

94. in which year was UK's premier computing event called ?The which computer? started?
A) 1980
B) 1985
C) 1986
D) 1987

95. Once you load the suitable program and provide required data, computer does not need human intervention. This feature is known as
A) Accuracy
B) Reliability
C) Versatility

D) Automatic

96. What is a brand?
A) The name of companies that made computers
B) The name of product a company gives to identify its product in market
C) A name of class to indicate all similar products from different companies
D) All of above

97. Machine language is
A) Machine dependent
B) Difficult to program
C) Error prone
D) All of above

98. A byte consists of
A) One bit
B) Four bits
C) Eight bits
D) Sixteen bits

99. Modern Computers are very reliable but they are not
A) Fast
B) Powerful
C) Infallible
D) Cheap

100. What is the date when Babbage conceived Analytical engine
A) 1642
B) 1837
C) 1880
D) 1850

Answers

1-A	2-D	3-D	4-D	5-C	6-A	7-C	8-D	9-C	10-B
11-C	12-C	13-D	14-C	15-C	16-B	17-B	18-B	19-C	20-D
21-B	22-D	23-C	24-A	25-A	26-B	27-B	28-A	29-B	30-D
31-B	32-D	33-B	34-A	35-A	36-D	37-A	38-C	39-B	40-B
41-C	42-B	43-C	44-D	45-C	46-A	47-B	48-D	49-A	50-B
51-D	52-B	53-B	54-D	55-C	56-C	57-C	58-C	59-B	60-B
61-C	62-B	63-D	64-A	65-D	66-D	67-C	68-A	69-B	70-C
71-C	72-B	73-C	74-D	75-B	76-A	77-D	78-C	79-A	80-A
81-C	82-D	83-C	84-B	85-D	86-D	87-A	88-C	89-D	90-D
91-D	92-C	93-C	94-A	95-D	96-B	97-D	98-C	99-C	100-B

Part-2

101. What was the expected feature of fifth generation computers when Japan started FGCS?
A) Operating Systems
B) Paralled Processing
C) ULSI
D) None of above

102. Which of the following memory medium is not used as main memory system?
A) Magnetic core
B) Semiconductor
C) Magnetic tape
D) Both semiconductor and magnetic tape

103. The storage subsystem in a microcomputer consists mainly of __ or __ media with varying capacities
A) Memory or video
B) Magnetic or optical
C) Optical or memory
D) Video or magnetic

104. Programs designed to perform specific tasks is known as
A) system software
B) application software
C) utility programs
D) operating system

105. Computer operators
A) writes computer programs for specific problems
B) operate the device which input and output data from the computer
C) normally require a college degree in computer science
D) all of the above

106. Which of the following is not anti-viruses software?
A) NAV
B) F-Prot
C) Oracle
D) McAfee

107. What is a compiler?
A) A compiler does a conversion line by line as the program is run
B) A compiler converts the whole of a higher level program code into machine code in one step
C) A compiler is a general purpose language providing very efficient execution
D) None of the above

108. _____ computers are also called personal computers
A) Mainframe Computer
B) Mini Computers
C) Micro Computers
D) Super Computers

109. Which of the following is not input unit device?
A) scanner
B) camera
C) plotter
D) digitizer

110. Identify the correct statement
A) IBM PCs used RISC CPU designs
B) Macintosh used CISC CPU design
C) IBM used CISC CPU design
D) None of above is true

111. Which of the following statement is false?
A) Mechanical analog computers have existed for thousands of years

B) There are mechanical analog computers and electronic analog computers.

C) All electronic computers are digital computers

D) All of above are false

112. Which of the following require large computers memory?

A) Imaging

B) Graphics

C) Voice

D) All of Above

113. Which of the following is machine independence program?

A) High level language

B) Low level language

C) Assembly language

D) Machine language

114. When was the first electro-mechanical computer developed?

A) 1880

B) 1990

C) 1944

D) None of above

115. The first machine to successfully perform a long series of arithmetic and logical operations was:

A) ENIAC

B) Mark-I

C) Analytic Engine

D) UNIVAC-1

116. Which one is the largest space?

A) kilobyte

B) petabyte

C) terrabyte

D) gigabyte

117. FORTRAN programming language is more suitable for _____

A) Business Applications

B) Marketing Applications

C) Scientific Applications

D) None of the above

118. The brain of any computer system is

A) Control Unit

B) Arithmetic Logic Unit

C) Central Processing Unit

D) Storage Unit

119. Analog computer works on the supply of

A) Continuous electrical pulses

B) Electrical pulses but not continuous

C) Magnetic strength

D) None of the above

120. An error in software or hardware is called a bug. What is the alternative computer jargon for it?

A) Leech

B) Squid

C) Slug

D) Glitch

121. The advantage of COM are its __ and __

A) Compact size; speed readability

B) Compact size, speed

C) Readability; speed

D) Low cost; readability

122. The BIOS is the abbreviation of _____.

A) Basic Input Output System

B) Best Input Output System

C) Basic Input Output Symbol

D) Base Input Output System

123. Which printer is very commonly used for desktop publishing?

A) Laser printer

B) Inkjet printer

C) Daisywheel printer

D) Dot matrix printer

124. IBM 1401 is

A) First Generation Computer

B) Second Generation Computer

C) Third Generation Computer

D) Fourth Generation Computer

125. Most of the first generation computers were

A) Special purpose computers

B) General purpose computers

C) Both of above

D) None of above

126. Floppy disks typically in diameter

A) 3

B) 5.25

C) 8

D) All of above

127. The output quality of a printer is measured by

A) Dot per inch

B) Dot per sq. inch

C) Dots printed per unit time

D) All of above

128. On a PC, how much memory is available to application software?

A) 1024 KB

B) 760 KB

C) 640 KB

D) 560 KB

129. In a computer _____ is capable to store single binary bit.

A) Capacitor

B) Flip flop

C) Register

D) Inductor

130. What does DMA stand for?

A) Distinct Memory Access

B) Direct Memory Access

C) Direct Module Access

D) Direct Memory Allocation

131. Who invented Integrated Circuits?

A) Jack Kilby

B) Robert Noyce

C) Both of above

D) None of above

132. Operating system, editors, and debuggers comes under?

A) System Software

B) Application Software

C) Utilities

D) None of the above

133. One computer that is not considered a portable is

A) Minicomputer

B) Laptop computer

C) Notebook computer

D) All of above

134. Which of the following is not an electronic computer?

A) ENIAC

B) ABC

C) UNIVAC

D) EDVAC

135. What is the name of the display feature that highlights are of the screen which requires operator attention?

A) Pixel

B) Reverse video

C) Touch screen

D) Cursor

136. Which is the largest computer?

A) Mainframe Computer

B) Mini Computers

C) Micro Computers

D) Super Computers

137. Which of the following are the best units of data on an external storage device?

A) Bits

B) Bytes

C) Hertz

D) Clock cycles

138. The personal computer industry was started by

A) IBM

B) Apple

C) Compaq

D) HCL

139. What is meant by a dedicated computer?

A) Which is used by one person only

B) Which is assigned one and only one task

C) Which uses one kind of software

D) Which is meant for application software

140. Which programming languages are classified as low level languages?

A) Basic, COBOL, FORTRAN

B) Prolog 2, Expert Systems

C) Knowledge based Systems

D) Assembly Languages

141. What was the main disadvantage of vacuum tubes?

A) They were larger in size

B) They consumed a lot of electricity

C) They produced heat and often burned out

D) The operation cost was high

142. Registers, which are partially visible to users and used to hold conditional, are known as

A) PC

B) Memory address registers

C) General purpose register

D) Flags

143. Which is not a comptuer of first generation?

A) ENIAC

B) UNIVAC

C) IBM 360

D) IBM 1401

144. Registers which are partially visible to users and used to hold conditional codes (bits set by the CPU hardware as the result of operations), are known as

A) PC

B) Flags

C) Memory Address Registers

D) General Purpose Registers

145. Who invented vacuum tubes?

A) John Bardeen

B) William Shockley

C) Lee de Forest

D) All of above

146. An approach that permits the computer to work on several programs instead of one is

A) On-line thesaurus

B) Multiprogramming

C) Over lapped processing

D) Outline processor

147. Who suggested Stored Program Concept

A) John Mauchley

B) J.P. Eckert

C) John Neumann

D) Joseph Jacquard

148. The central processing unit (CPU) consists of

A) Input, output and processing

B) Control unit, primary storage, and secondary storage

C) Control unit, arithmetic-logic unit and primary storage

D) Control unit, processing, and primary storage

149. The notable features like keyboards, monitors, GUI were developed in

A) First generation

B) Second generation

C) Third generation

D) Fourth generation

150. UNIVAC is

A) Universal Automatic Computer

B) Universal Array Computer

C) Unique Automatic Computer

D) Unvalued Automatic Computer

151. Which is the highest form?

A) Data

B) Information

C) Knowledge

D) All of above

152. Who is credited with the idea of using punch cards to control patterns in a waving machine?

A) Pascal

B) Hollerith

C) Babbage

D) Jacquard

153. What is an interpreter?

A) An interpreter does the conversion line by line as the program is run

B) An interpreter is the representation of the system being designed

C) An interpreter is a general purpose language providing very efficient execution

D) None of the above

154. Which is a semi conductor memory?

A) Dynamic

B) Static

C) Bubble

D) Both a & b

155. RJ45 UTP cable has _____ Cables.

A) 2 pair

B) 3 pair

C) 4 pair

D) 5 pair

156. Which of the following is not a valid size of a Floppy Disk?

A) 8?

B) 5 ¼?

C) 3 ½?

D) 5 ½?

157. The earliest calculating devices are

A) Abacus

B) Clock

C) Difference Engine

D) None of these

158. Word length of a Personal Computer is ___

A) 4 bits

B) 8 bits

C) 16 bits

D) 64 bits

159. What was the first computer to perform all calculation using electronics rather than wheels, ratchets, or mechanical switches?

A) Mark I

B) ABC

C) Z3

D) None of above

160. A directly accessible appointment calendar is feature of a __ resident package

A) CPU

B) Memory

C) Buffer

D) ALU

161. Which unit converts computer data into human readable form?

A) Input unit

B) Output unit

C) ALU

D) Control Unit

162. The full form of ALU is

A) Arithmetic Logic Unit

B) Array Logic Unit

C) Application Logic Unit

D) None of above

163. What produces useful information out of data?

A) Computer

B) Processing

C) Programming

D) none of above

164. Which of the following device was not invented by Babbage?

A) Pascaline

B) Difference Engine

C) Analytical Engine

D) None of above

165. A digital computer did not score over an analog computer in terms of

A) Speed

B) Accuracy

C) Reliability

D) Cost

166. Which number system is usually followed in a typical 32-bit computer?

A) Binary

B) Decimal

C) Hexadecimal

D) Octal

167. A computer has very low failure rate because it uses electronic components. It produces very consistent results. This is highlighted by which of the feature of computer?

A) Accuracy

B) Reliability

C) Versatility

D) Automatic

168. A paper printout of a document is known as

A) Softcopy output

B) Hardcopy output

C) Permanent Output

D) All of above

169. Which electronic component was made out of semiconductor material?

A) Vacuum tubes

B) Transistors

C) Ics

D) All of above

170. The act of retrieving existing data from memory is called

A) Read-out

B) Read from

C) Read

D) All of above

171. Which part of the computer is used for calculating and comparing?

A) Disk unit

B) Control unit

C) ALU

D) Modem

172. ABC is a

A) Special purpose computer

B) General purpose computer

C) All Purpose Computer

D) None of above

173. The computer code for the interchange of information between terminals is

A) ASCII

B) BCD

C) EBCDIC

D) All of above

174. When was the X window system born?

A) 1984

B) 1989

C) 1988

D) 1990

175. What is the first stage in software development?

A) Specification and design

B) Testing

C) System Analysis

D) Maintenance

176. Which of the following is valid statement?

A) Data in itself is useless unless it is processed

B) The data that is processed is called a program

C) The data which is not yet processed is information

D) Information is processed by computer to generate data.

177. The Second Generation Computer was based on _____.

A) Vacuum Tube

B) Silicon Chips

C) Transistor

D) Bio Chips

178. EBCDIC stands for

A) Extended Binary Coded Decimal Interchange Code

B) Extended Bit Code Decimal Interchange Code

C) Extended Bit Case Decimal Interchange Code

D) Extended Binary Case Decimal Interchange Code

179. Personnel who design, program, operates and maintains computer equipment refers to

A) Console-operator

B) Programmer

C) Peopleware

D) System Analyst

180. IBM System/360 is

A) Mainframe Computer

B) Mini Computers

C) Micro Computers

D) None of above

181. A system is

A) an integration of different units so as to achieve an objective

B) input unit

C) input and output unit

D) input, output and storage units

182. Which of the following programming language started from second generation?

A) COBOl

B) BASIC

C) C

D) LISP

183. The translator program used in assembly language is called
A) Compiler
B) Interpreter
C) Assembler
D) Translator

184. EEPROM stands for
A) Electrically Erasable Programmable Read Only Memory
B) Easily Erasable Programmable Read Only Memory
C) Electronic Erasable Programmable Read Only Memory
D) None of the above

185. Regarding data, computers are very good at
A) store
B) Processing
C) retrieve
D) All of above

186. Bit map terminal
A) support display containing multiple window
B) require considerable amount of video RAM
C) requires tremendous amount of copying and hence low performance
D) all of above

187. First generation computers used _____ for memory
A) vacuum tubes
B) silicon chips
C) magnetic drum
D) RAM

188. Which of the following memories allows simultaneous read and write operations?

A) ROM
B) RAM
C) EPROM
D) None of above

189. EPROM can be used for
A) Erasing the contents of ROM
B) Reconstructing the contents of ROM
C) Erasing and reconstructing the contents of ROM
D) Duplicating ROM

190. ENIAC uses
A) Decimal Numbering System
B) Octal Numbering System
C) Binary Numbering System
D) Hexadecial Numbering System

191. A term associated with the comparison of processing speeds of different computer system is:
A) EFTS
B) MPG
C) MIPS
D) CPS

192. which of the following is problem oriented language?
A) High level language
B) Machine language
C) Assembly language
D) Low level language

193. A 32 bit microprocessor has the word length equal to
A) 2 byte
B) 32 byte
C) 4 byte
D) 8 byte

194. The term GIGO is related to
A) Accuracy
B) Reliability

C) Versatility

D) Automatic

195. Web cam is an

A) input unit device

B) output unit device

C) processing device

D) Input and Output device

196. Bit stands for

A) Binary digits

B) bit of system

C) a part of byte

D) All of above

197. Access time is

A) seek time + latency time

B) seek time

C) seek time ? latency time

D) latency time

198. Which device can understand difference between data & programs?

A) Input device

B) Output device

C) Memory

D) Microprocessor

199. Which of the following is a read only memory storage device?

A) Floppy Disk

B) CD-ROM

C) Hard Disk

D) None of these

200. Symbolic logic was discovered by

A) George Boole

B) Herman Hollerith

C) Van Neumann

D) Basic Pascal

Answers:

101-B 102-C 103-B 104-B 105-B 106-C 107-B 108-C 109-C 110-C

111-C 112-D 113-A 114-C 115-B 116-B 117-C 118-C 119-A 120-D

121-A 122-A 123-A 124-B 125-A 126-D 127-B 128-C 129-B 130-B

131-C 132-A 133-A 134-B 135-B 136-A 137-B 138-A 139-B 140-D

141-C 142-D 143-D 144-B 145-C 146-C 147-C 148-C 149-C 150-A

151-C 152-D 153-B 154-D 155-C 156-D 157-A 158-B 159-B 160-B

161-B 162-A 163-B 164-A 165-B 166-A 167-B 168-B 169-C 170-D

171-C 172-A 173-A 174-A 175-C 176-A 177-C 178-A 179-C 180-A

181-A 182-A 183-C 184-A 185-D 186-D 187-C 188-B 189-C 190-A

191-C 192-A 193-C 194-A 195-A 196-A 197-A 198-D 199-B 200-A

Part-3

201. Which of the following is not valid statement?
A) Hard is referred to mean something temporary
B) Hard is used to mean something tangible
C) Soft is used to mean something permanent
D) Soft is used to mean something tangible

202. Digital devices are
A) Digital Clock
B) Automobile speed meter
C) Clock with a dial and two hands
D) All of them

203. Primary memory stores
A) Data alone
B) Programs alone
C) Results alone
D) All of these

204. After copying the content how many times can you paste?
A) 1
B) 16
C) 32
D) Many

205. WAN stands for
A) Wap Area Network
B) Wide Area Network
C) Wide Array Net
D) Wireless Area Network

206. An error in computer data is called
A) Chip
B) Bug
C) CPU
D) Storage device

207. The instructions for starting the computer are house on
A) Random access memory
B) CD-Rom
C) Read only memory chip
D) All of above

208. 1 nibble equals to
A) 1 bits
B) 2 bits
C) 4 bits
D) 8 bits

209. Perforated paper used as input of output media is known as
A) paper tapes
B) magnetic tape
C) punched papers tape
D) card punch

210. The secondary storage devices can only store data but they cannot perform
A) Arithmetic Operation
B) Logic operation
C) Fetch operations
D) Either of the above

211. Which American computer company is called Big Blue?
A) Microsoft
B) Compaq Corp
C) IBM
D) Tandy Svenson

212. It was in 2028 BS the _____ was brought in to calculate census data.
A) IBM 1400
B) IBM 1401
C) ICL 2950
D) None of above

213. Who is the inventor of ABC Computer?
A) John v. Atanasoff
B) Clifford Berry

C) Both of above

D) None of above

214. Which of the following is the largest unit?

A) data

B) field

C) record

D) database file

215. Find out who is not the inventor of transistors among following names

A) John Burdeen

B) William Shockley

C) Walter Brattain

D) Lee de Forest

216. Which of the following is not true for a magnetic disk?

A) It is expensive relative to magnetic tape

B) It provides only sequential access to stored data

C) Users can easily update records by writing over the old data

D) All of above

217. A disadvantage of the laser printer is

A) It is quieter than an impact printer

B) It is very slow

C) The output is of a lower quality

D) None of the above

218. The most commonly used standard data code to represent alphabetical, numerical and punctuation characters used in electronic data processing system is called

A) ASCII

B) EBCDIC

C) BCD

D) All of above

219. Which access method is used to access cassette tape?

A) Direct

B) Sequential

C) Both of the above

D) None of the above

220. A Compiler is _____

A) a combination of computer hardware

B) a program which translates from one high-level language to another

C) a program which translates from one high-level to a machine level language

D) None of these

221. Which unit holds data temporarily?

A) Input unit

B) Secondary storage unit

C) Output Unit

D) Primary Memory Unit

222. The computer size was very large in

A) First Generation

B) Second Generation

C) Third Generation

D) Fourth Generation

223. A name or number used to identify storage location devices?

A) A byte

B) A record

C) An address

D) All of above

224. Which of the following is not computer language?

A) High level language

B) Medium level language

C) Low level language

D) All of the above

225. Reading data is performed in magnetic disk by

A) Read/write leads

B) Sectors

C) Track

D) Lower surface

226. IBM 7000 digital computer

A) Belongs to second generation

B) Uses VLSI

C) Employs semiconductor memory

D) Has modular constructions

Computer Fundamental Book will be available to download as PDF file soon. Please stay tuned!

227. Which of the following is not electro-mechanical computer?

A) Mark I

B) ABC

C) Zuse

D) UNIVAC

228. The term 'computer' is derived from

A) Greek language

B) Sanskrit language

C) Latin language

D) German language

229. Which statement is valid about magnetic tape?

A) It is a plastic ribbon

B) It is coated on both sides with iron oxide

C) It can be erased and reused

D) All of above

230. Which of the following is first generation computer?

A) EDSAC

B) IBM 1401

C) CDC 1604

D) ICL 2950

231. A hard copy would be prepared on a

A) Line printer

B) Dot matrix Printer

C) Typewriter terminal

D) All of the above

232. The term GIGO is related to which characteristics of computers?

A) Speed

B) Automatic

C) Accuracy

D) Reliability

233. Which of the following programming language were used in first generation computers?

A) Machine language

B) Assembly language

C) Both of above

D) None of above

234. To locate a data item for storage is

A) Field

B) Feed

C) Database

D) Fetch

235. Who used punched cards practically for the first time in the history of computers?

A) Charles Babbage

B) Dr. Herman Hollerith

C) Howard Aikin

D) Joseph Jacquard

236. Hard disk is coated in both sides with

A) Magnetic metallic oxide

B) Optical metallic oxide

C) Carbon layer

D) All of the above

237. Which of the following term means to reckon?

A) putare

B) com

C) computa

D) computar

238. An input /output device at which data enters or leaves a computer system is

A) Keyboard

B) Terminal

C) Printer

D) Plotter

239. Which of the following is first generation of computer

A) EDSAC

B) IBM-1401

C) CDC-1604

D) ICL-2900

240. A name or number used to identify a storage location is called

A) A byte

B) A record

C) An address

D) All of above

241. Computer professionals working in a computer centre are

A) Software

B) Firmware

C) Hardware

D) Humanware

242. The first general purpose electronic computer in the world was

A) UNIVAC

B) EDVAC

C) ENIAC

D) All of above

243. The contents of information are stored in

A) Memory data register

B) Memory address register

C) Memory arithmetic registers

D) Memory access register

244. Which of the following is correct full form of BCD?

A) Binary Coded Decimal

B) Bit Coded Decimal

C) Binary Coded Digit

D) Bit Coded Digit

245. Which was the world's first microcomputer that used Intel 80386 microprocessor chip?

A) IBM PS/2

B) HP-9830

C) DeskPro-386

D) IBM-360

246. The qualitative or quantitative attribute of a variable or set of variables is termed as

A) data

B) information

C) both of above

D) none of above

247. Main storage is also called

A) Accumulator

B) Control Unit

C) Register Unit

D) Memory

248. Which of the following are (is) considered to be video component?

A) Resolution

B) Color depth

C) Refresh rate

D) All of the alcove

249. For what Antikyathera was used?

A) For counting

B) For Calculating tax collection

C) For calculating astronomical positions

D) For calculating firing weapons

250. Memory unit is one part of

A) Input device

B) Control unit

C) Output device

D) Central Processing Unit

251. Microprocessors can be used to make

A) Computer

B) Digital systems

C) Calculators

D) All of the above

252. Which statement is valid about computer program?

A) High level languages must be converted into machine language to execute

B) High level langage programs are more efficient and faster to execute

C) It is more difficult to identify errors in high level language program than in low level programs

D) All of above

253. By programmable machine we mean

A) computers

B) modern television

C) washing machines

D) anything that can be set to perform different taks with suitable programs

254. Which of the following is a secondary memory device?

A) Keyboard

B) Disk

C) ALU

D) All of the above

255. The memory which is programmed at the time it is manufactured

A) ROM

B) RAM

C) PROM

D) EPROM

256. One of the popular mass storage device is CD ROM. What does CD ROM stand for?

A) Compactable Read Only Memory

B) Compact Data Read Only Memory

C) Compactable Disk Read Only Memory

D) Compact Disk Read Only Memory

257. Identify the true statement

A) Computers are 100% accurate but it can suffer from GIGO

B) Computers are reliable because they use electronic component which have very low failure rate

C) Computer is never tired and does not suffer from boredom

D) All of above

258. FORTRAN is

A) File Translation

B) Format Translation

C) Formula Translation

D) Floppy Translation

259. The programs which are as permanent as hardware and stored in ROM is known as

A) Hardware

B) Software

C) Firmware

D) ROM ware

260. Which of the following memories must be refreshed many times per second?

A) Static RAM

B) Dynamic RAM

C) EPROM

D) ROM

261. What do you call the translator which takes assembly language program as input

& produce machine language code as output?

A) Compiler

B) Interpreter

C) Debugger

D) Assembler

262. Serial access memories are useful in applications where

A) Data consists of numbers

B) Short access time is required

C) Each stored word is processed differently

D) Data naturally needs to flow in and out in serial form

263. In _____ mode, the communication channel is used in both directions at the same time?

A) Full-duplex

B) Simplex

C) Half-duplex

D) None of the above

264. Who invented Slide Rules?

A) John Napier

B) William Oughtred

C) Gottfried Leibnitz

D) Blaise Pascal

265. The proper definition of a modern digital computer is

A) An electronic automated machine that can solve problems involving words and numbers

B) A more sophistic and modified electronic pocket calculator

C) Any machine that can perform mathematical operations

D) A machine that works on binary code

These questions are suitable for IC3 Computer Fundamentals too!

266. Memory is made up of

A) Set of wires

B) Set of circuits

C) Large number of cells

D) All of these

267. Which of the following is the most powerful computers?

A) Mainframe Computer

B) Mini Computers

C) Micro Computers

D) Super Computers

268. Which of the printers used in conjunction with computers uses dry ink powder?

A) Daisy wheel printer

B) Line printer

C) Laser printer

D) Thermal printer

269. What is the path from which data flow in a computer system is knon as

A) Car

B) Bus

C) Truck

D) Road

270. Which term is used to describe RAM?

A) Dynamic RAM (DRAM)

B) Static RAM (SRAM)

C) Video RAM (VRAM)

D) All of the above

271. In which year was chip used inside the computer for the first time?

A) 1964

B) 1975

C) 1999

D) 1944

272. Assembly language started to be used from

A) first generation computers

B) second generation computers

C) third generation computers

D) fourth generation computers

273. Which technology is more reliable?

A) Mechanical

B) Electro-Mechanical

C) Electronic

D) For reliability it does not matter. So all of above are reliable

274. Which of the following is not an XT microprocessor?

A) 8006

B) 8086

C) 8088

D) None of above

275. Hard disk is coated in both side with

A) Magnetic metallic oxide

B) Optical metallic oxide

C) Carbon layer

D) All of the above

276. ASCII stands for

A) American Stable Code for International Interchange

B) American Standard Case for Institutional Interchange

C) American Standard Code for Information Interchange

D) American Standard Code for Interchange Information

277. Raw facts and figures about any particular topic are

A) Information

B) facts

C) data

D) none of above

278. A computer can solve more than one kind of problem. This is related to which of the following characteristics?

A) Accuracy

B) Reliability

C) Versatility

D) Automatic

279. From which generation computers the printers were used?

A) first

B) second

C) third

D) fourth

280. How many symbols exist in Baudot code?

A) 32

B) 116

C) 58

D) 76

281. Following IC chip integrates 100 thousands electronic components per chip

A) SSI

B) MSI

C) LSI

D) VLSI

282. An application program that helps the user to change any number and immediately see the result of that change is

A) Desktop publishing program

B) Database

C) Spreadsheet

D) All of above

283. In 1830, Charles Babbage designed a machine called the Analytical Engine which he showed at the Paris Exhibition. In which year was it exhibition?

A) 1820

B) 1860

C) 1855

D) 1870

284. What is the name of the new color laptop computer which is powered by a 386 processor at 33 MHz and is built by Epson?

A) AX3/33

B) NEC-20

C) Magnum 2000

D) HCL-3000

285. In analog computer

A) Input is first converted to digital form

B) Input is never converted to digital form

C) Output is displayed in digital form

D) All of the above

286. Which of the following computer is not invented by J.P. Eckert and John Mauchly?

A) ENIAC

B) EDVAC

C) UNIVAC

D) EDSAC

287. When was the company named IBM?

A) 1914

B) 1924

C) 1975

D) None of above

288. Which of the following storage device can store the largest amount of data?

A) Hard Disks

B) Flash Disks

C) Blu-Ray Disks

D) DVDs

289. Who invented Mark I?

A) Howard Aikin

B) J. P. Eckert

C) John Mauchley

D) John v. Atanasoff

290. ALU is

A) Arithmetic Logic Unit

B) Array Logic Unit

C) Application Logic Unit

D) None of above

291. A computer program that converts an entire program into machine language at one time is called a/an

A) Interpreter

B) CPU

C) Compiler

D) Simulator

292. When did arch rivals IBM and Apple Computers Inc. decide to join hands?

A) 1978

B) 1984

C) 1990

D) 1991

293. The purpose of vacuum tube was to NOT ack like

A) an amplifier

B) a switch

C) a router

D) None of above

294. As compared to diskettes, the hard disks are

A) More expensive

B) More portable

C) Less rigid

D) Slowly accessed

295. Which of the following is the most quickly accessible storage?

A) RAM

B) Registers

C) Disks

D) Pen Drive

296. The octal equivalence of 111010 is

A) 81

B) 72

C) 71

D) None of above

You can find Computer Fundamentals Quiz under the Quiz menu that allows you to choose correct answers and find result once you are done with all the questions.

297. Excessive parallel processing is related to

A) First generation

B) Fourth generation

C) Fifth Generation

D) Third generation

298. second generation computers were developed during

A) 1949 to 1955

B) 1956 to 1965

C) 1965 to 1970

D) 1970 to 1990

299. What do you call a single point on a computer screen?

A) Cell

B) Element

C) Pixel

D) Bit

300. Mostly which of the following device is used to carry user files?

A) Floppy Disk

B) Hard Disk

C) RAM

D) CDROM

Answers:

201-B 202-A 203-D 204-D 205-B 206-B 207-C 208-C 209-A 210-D

211-C 212-B 213-C 214-D 215-D 216-B 217-D 218-A 219-B 220-C

221-D 222-A 223-C 224-B 225-A 226-D 227-D 228-C 229-D 230-A

231-D 232-C 233-A 234-D 235-B 236-A 237-A 238-B 239-A 240-C

241-D 242-C 243-A 244-A 245-C 246-A 247-D 248-D 249-C 250-D

251-D 252-A 253-D 254-B 255-C 256-D 257-D 258-C 259-C 260-B

261-D 262-D 263-A 264-B 265-A 266-C 267-D 268-C 269-B 270-D

271-B 272-B 273-C 274-D 275-A 276-C 277-C 278-C 279-B 280-A

281-C 282-C 283-C 284-A 285-B 286-D 287-B 288-A 289-A 290-A

291-C 292-D 293-C 294-A 295-B 296-B 297-C 298-B 299-C 300-A

Part-4

301. Which of the following computer implemented binary numbers, perform calculations using electronics and implemented separate computation and memory for the first time?

A) Mark I

B) ABC

C) Z3

D) None of above

302. FORTRAN is a programming language. What does FORTRAN stand for?

A) File Translation

B) Format Translation

C) Formula Translation

D) Floppy Translation

303. Which of the following memories needs refreshing?

A) SRAM

B) DRAM

C) ROM

D) All of above

304. Can you tell what passes into and out from the computer via its ports?

A) Data

B) Bytes

C) Graphics

D) Pictures

305. An output device that uses words or messages recorded on a magnetic medium to produce audio response is

A) Magnetic tape

B) Voice response unit

C) Voice recognition unit

D) Voice band

306. Which of the items below are considered removable storage media?

A) Removable hard disk cartridges

B) (Magneto-optical) disk

C) Flexible disks cartridges

D) All of the above

307. Which of the following is not purely output device?

A) Screen

B) Printer

C) Speaker

D) Plotter

308. Who developed a mechanical device in the 17th century that could add, subtract, multiple, divide and find square roots?

A) Napier

B) Babbage

C) Pascal

D) Leibniz

309. The first Macintosh computer was from

A) First generation

B) Second generation

C) Third generation

D) Fourth generation

310. Which of the following is not a form of data?

A) numbers and characters

B) images

C) sound

D) none of above

311. Which is not a computer classification?

A) mainframe

B) maxframe

C) mini

D) notebook

312. The control unit of a microprocessor

A) Stores data in the memory

B) Accepts input data from keyboard

C) Performs arithmetic/logic function

D) None of above

313. Which of the following is internal memory?

A) Disks

B) Pen Drives

C) RAM

D) CDs

314. Which operation is not performed by computer

A) Inputting

B) Processing

C) Controlling

D) Understanding

315. Floppy disks which are made from flexible plastic material are also called?

A) Hard disks

B) High-density disks

C) Diskettes

D) Templates

316. The magnetic storage chip used to provide non-volatile direct access storage of data and that have no moving parts are known as

A) Magnetic core memory

B) Magnetic tape memory

C) Magnetic disk memory

D) Magnetic bubble memory

317. A collection of related instructions organized for a common purpose is referred to as

A) File

B) Database

C) Program

D) None of above

318. Plotter accuracy is measured in terms of repeatability and

A) Buffer size

B) Resolution

C) Vertical dimensions

D) Intelligence

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319. Computer instructions written with the use of English words instead of binary machine code is called

A) Mnemonics

B) Symbolic code

C) Gray codes

D) Opcode

320. Which language is directly understood by the computer without translation program?

A) Machine language

B) Assembly language

C) High level language

D) None of above

321. On which aspect the analog computers are better than digital?

A) Speed

B) Accuracy

C) Reliability

D) Automatic

322. Which of the following processors use RISC technology?

A) 486dx

B) Power PC

C) 486sx

D) 6340

323. Which of the following machine was not invented by Charles Babbage?

A) Tabulating Machine

B) Analytical Engine

C) Difference Engine

D) Both C and D

Computer Fundamental Exam Papers

324. How many numbers could ENIAC store in its internal memory

A) 100

B) 20

C) 80

D) 40

325. The subject of cybernetics deals with the science of

A) Genetics

B) Control and communication

C) Molecular biology

D) Biochemistry

326. Why ABC is considered electro-mechanical computer?

A) Because it was invented before electronic computers were developed

B) Because there are wheels, drums, bars to rotate and move to produce result

C) Because they use the flow of electrons in different component

D) None of above

327. Binary circuit elements have

A) One stable state

B) Two stable state

C) Three stable state

D) None of above

328. Which of the following is used for manufacturing chips?

A) Control bus

B) Control unit

C) Parity unit

D) Semiconductor

329. Which of the following is not a micro computer?

A) Laptop PCs

B) Tablet PCs

C) Desktop PCs

D) None of above

330. The value of each bead in earth is

A) 1

B) 3

C) 5

D) 7

331. When did John Napier develop logarithm?

A) 1416

B) 1614

C) 1641

D) 1804

332. Which of the following terms is the most closely related to main memory?

A) Non volatile

B) Permanent

C) Control unit

D) Temporary

333. Which was the world's first minicomputer and when was it introduced?

A) PDP-I, 1958

B) IBM System/36, 1960

C) PDP-II, 1961

D) VAX 11/780, 1962

334. A group of magnetic tapes, videos or terminals usually under the control of one master is

A) Cylinder

B) Surface

C) Track

D) Cluster

335. The word length of a computer is measured in
A) Bytes
B) Millimeters
C) Meters
D) Bits

336. What type of memory is not directly addressable by the CPU and requires special softw3are called EMS (expanded memory specification)?
A) Extended
B) Expanded
C) Base
D) Conventional

337. Which unit holds data permanently?
A) Input unit
B) Secondary storage unit
C) Output Unit
D) Primary Memory Unit

338. Before a disk can be used to store data. It must be_____
A) Formatted
B) Reformatted
C) Addressed
D) None of the above

339. Computer system comprises of major units
A) input unit, output unit, control unit
B) input unit, output unit, control unit and storage
C) input unit, output unit, central processing unit and storage unit
D) input, output and storage units

340. The first general purpose electronic digital computer in the world was
A) UNIVAC
B) EDVAC
C) ENIAC
D) All of above

341. Signals can be analog or digital and a computer that processes the both type of signals is known as
A) Analog computer
B) Digital Computer
C) Hybrid Computer
D) Mainframe Computer

342. High level language is also called
A) Problem oriented language
B) Business oriented language
C) Mathematically oriented language
D) All of the above

343. Human beings are referred to as Homosapinens, which device is called Silico Sapiens?
A) Monitor
B) Hardware
C) Robot
D) Computer

344. Which of the following file organization is most efficient for a file with a high degree of file activity?
A) Sequential
B) ISAM
C) VSAM
D) B-Tree Index

345. Which of the following is associated with error detector?
A) Odd parity bit
B) Even parity bit
C) Both of the above
D) None of above

346. Magnetic tape can serve as
A) Secondary storage media
B) Output media

C) Input media

D) All of the above

347. Which company is the biggest player in the microprocessor industry?

A) Motorola

B) IBM

C) Intel

D) AMD

348. The first digital computer built with IC chips was known as

A) IBM 7090

B) Apple ? 1

C) IBM System / 360

D) VAX-10

349. EBCDIC can code up to how many different characters?

A) 256

B) 16

C) 32

D) 64

350. MICR stands for

A) Magnetic Ink Character Reader

B) Magnetic Ink Code Reader

C) Magnetic Ink Cases Reader

D) None

351. Number crunchier is the informal name for

A) Mini computer

B) Super computer

C) Microcomputer

D) Mainframe computer

352. RATS stand for

A) Regression Analysis Time Series

B) Regression Analysis Time Sharing

C) Real Analysis Series

D) All of above

353. Which technology is used in Compact disks?

A) Mechanical

B) Electrical

C) Electro Magnetic

D) Laser

354. Different components of the motherboard of a PC unit are linked together by sets of parallel electrical conducting lines. What are these lines called?

A) Conductors

B) Buses

C) Connectors

D) Consecutive

355. Which is the first electronic digital computer?

A) ENIAC

B) MARK I

C) Z3

D) ABC

356. Which of the following is a storage device?

A) Tape

B) Hard Disk

C) Floppy Disk

D) All of the above

357. The metal disks, which are permanently housed in, sealed and contamination free containers are called

A) Hard disks

B) Floppy disk

C) Winchester disk

D) Flexible disk

358. A computer program that converts an entire program into machine language is called a/an

A) Interpreter

B) Simulator

C) Compiler

D) Commander

359. Intel corporation produces chips for which computers?

A) IBM PCs

B) Apple/Macintosh PCs

C) Both of above

D) None of above

360. The first microprocessor built by the Intel corporation was called

A) 8008

B) 8080

C) 4004

D) 8800

361. Which of the following is not a class of computers based on size?

A) Mainframe Computers

B) Mini Computers

C) Micro Computers

D) Super Computers

362. Who invented EDSAC?

A) John v. Neumann

B) J.p. Eckert and John Mauchley

C) Maurice Wilkes

D) Howard Aiken

363. EEPROM stands for

A) Electrically Erasable Programmable Read Only Memory

B) Electronic Erasable Programmable Read Only Memory

C) Easily Erasable Programmable Read Only Memory

D) Easily Erasable Programmable Read Only Memory

364. Which of the following is a class of computers based on model?

A) Digital Computer

B) Hybrid Computers

C) Analog Computers

D) AT Computers

365. What are the computers called that performs calculations and comparisons usually in the binary numbering system?

A) Analog Computers

B) Digital Computers

C) Hybrid Computers

D) None of above

366. ASCII stands for

A) American Standard Code for Information Interchange

B) American Scientific Code for International Interchange

C) American Standard Code for Intelligence Interchange

D) American Scientific Code for Information Interchange

367. The data recording format in most of the modern magnetic tape is

A) 7-bit ASCII

B) 7-bit EBCDIC

C) 8-bit ASCII

D) 8-bit EBCDIC

368. Why ABC computer is called so?

A) Because it was developed by Atanasoff and Berry

B) Because it was thought to be the first computer so named with first alphabets of English

C) Both of above are the reason to name the computer ABC

D) None of above are true

369. Who designed the first electronics computer ? ENIAC/
A) Von Neumann
B) Joseph M Jacquard
C) J. P. Eckert and J. W. Mauchly
D) All of above

370. Central Processing Unit is combination of
A) Control and storage
B) Control and output unit
C) Arithmetic logic and input unit
D) Arithmetic logic and control unit

371. IBM 1401 computer was
A) Mainframe Computer
B) Mini Computers
C) Micro Computers
D) None of above

372. Time during which a job is processed by the computer is
A) Delay times
B) Real time
C) Execution time
D) Down time

373. CD-ROM stands for
A) Compactable Read Only Memory
B) Compact Data Read Only Memory
C) Compactable Disk Read Only Memory
D) Compact Disk Read Only Memory

374. Which unit converts user data into machine readable form?
A) Input unit
B) Output unit
C) ALU
D) Control Unit

375. Which unit is known as nerve center of computer?
A) ALU
B) CU
C) Memory
D) Registers

376. What does the disk drive of a computer do?
A) Rotate the disk
B) Read the disk
C) Load a program from the disk into the memory
D) Both b and c

377. Access time is
A) seek time + latency time
B) seek time
C) seek time
D) latency time

378. Who invented the microprocessor?
A) Marcian E Huff
B) Herman H Goldstein
C) Joseph Jacquard
D) All of above

379. MICR stands for
A) Magnetic Ink Character Reader
B) Magnetic Ink Code Reader
C) Magnetic Ink Case Reader
D) None of the above

380. The Width of a processor's data path is measured in bits. Which of the following are common data paths?
A) 8 bits
B) 12 bits
C) 16 bits
D) 32 bits

381. MSI is the abbreviation of
A) Medium Scale Integrated
B) Medium System Integrated
C) Medium Scale Intelligent
D) Medium System Intelligent

382. IMB launched its first personal computer called IBM-PC in 1981. It had chips from Intel, disk drives from Tandon, operating system from Microsoft, the printer from Epson and the application software from everywhere. Can you name the country which contributed

A) India

B) China

C) Germany

D) Taiwan

383. Which statement is valid about interpreter?

A) It translates one instruction at a time

B) Object code is saved for future use

C) Repeated interpretation is not necessary

D) All of above

384. Easily reloctable language is

A) Machine language

B) Assembly language

C) High level language

D) Medium level language

385. Which of the following memories needs refresh?

A) SRAM

B) DRAM

C) ROM

D) All of above

386. Through which device the main components of the computer communicate with each other?

A) Keyboard

B) System Bus

C) Monitor

D) Memory

387. What type of device is computer keyboard?

A) Memory

B) Output

C) Storage

D) Input

388. Which is the limitation of high level language?

A) Lower efficiency

B) Machine dependence

C) machine level coding

D) None of above

389. An example of a digital device can be

A) Digital clock

B) Automobile speed meter

C) Clock with a dial and two hands

D) All of the above

390. Which of the following is not true?

A) Transistors are much smaller

B) Transistors produce low heat

C) Transistors were less reliable

D) Transistors were used in radios and other electronic devices

391. A characteristic of card systems is:

A) Slowness in processing data

B) Using cards as records of transactions

C) Needing a larger DP staff

D) All of the above

392. The full form of EEPROM is

A) Electrically Erasable Programmable Read Only Memory

B) Easily Erasable Programmable Read Only Memory

C) Electronic Erasable Programmable Read Only Memory

D) None of the above

393. The original ASCII code used__bits of each byte, reserving that last bit for error checking

A) 5
B) 6
C) 7
D) 8

394. A computer programmer
A) Does all the thinking for a computer
B) Can enter input data quickly
C) Can operate all types of computer equipments
D) Can draw only flowchart

395. Fifth generation computer is also known as
A) Knowledge information processing system
B) Very large scale integration (VLSI)
C) Both of above
D) None of above

396. The commonly used standard data code to represent alphabetical, numerical and punctuation characters used in electronic data processing system is called
A) ASCII
B) EBCDIC
C) BCD
D) All of above

397. Which of the following have low failure rate?

A) mechanical devices
B) electronic devices
C) electro-mechanical devices
D) None of above

398. Which of the following memories need refresh?
A) SRAM
B) DRAM
C) ROM
D) All of the above

399. A typical personal computer used for business purposes would have__ of RAM.
A) 4 KB
B) 16 K
C) 64 K
D) 256 K

400. The ALU of a computer normally contains a number of high speed storage element called
A) Semiconductor memory
B) Registers
C) Hard disks
D) Magnetic disk

Answers

301-B 302-C 303-B 304-A 305-B 306-D 307-A 308-D 309-D 310-D
311-B 312-D 313-C 314-D 315-C 316-D 317-C 318-B 319-B 320-A
321-B 322-B 323-A 324-B 325-B 326-B 327-B 328-D 329-D 330-A
331-B 332-D 333-A 334-D 335-D 336-B 337-B 338-A 339-C 340-C
341-C 342-D 343-D 344-A 345-C 346-A 347-C 348-C 349-A 350-A
351-b 352-A 353-D 354-B 355-D 356-D 357-C 358-C 359-A 360-C
361-D 362-C 363-A 364-D 365-B 366-A 367-D 368-A 369-C 370-D
371-A 372-C 373-D 374-A 375-B 376-D 377-A 378-A 379-A 380-A
381-A 382-D 383-A 384-B 385-B 386-B 387-D 388-A 389-A 390-C
391-D 392-A 393-C 394-A 395-A 396-D 397-B 398-B 399-D 400-B

Bank Math

1.Problems on Trains	13.Time and Distance	26.Height and Distance
2.Time and Work	14.Simple Interest	27.Compound Interest
3.Profit and Loss	15.Partnership	28.Percentage
4.Problems on Ages	16.Calendar	29.Clock
5.Average	17.Area 18. N/A	30.Volume and Surface Area
6.Permutation and Combination	19.Numbers	31.Problems on Numbers
7.Problems on H.C.F and L.C.M	20.Decimal Fraction	32.Simplification
8.Square Root and Cube Root	21.Surds and Indices	33.Ratio and Proportion
9.Chain Rule	22.Pipes and Cistern	34.Boats and Streams
10.Alligation or Mixture	23.Logarithm	35.Races and Games
11.Stocks and Shares	24.Probability	36.True Discount
12.Banker's Discount	25.Odd Man Out and Series	

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1. **Problems on Trains**

1. A train running at the speed of 60 km/hr crosses a pole in 9 seconds. What is the length of the train?
   A. 120 metres
   B. 180 metres
   C. 324 metres
   D. 150 metres
   Answer & Explanation

   Answer: Option **D**

   Explanation:

   $$\text{Speed} = \left(60 \times \frac{5}{18}\right) \text{m/sec} = \left(\frac{50}{3}\right) \text{m/sec.}$$

   $$\text{Length of the train} = (\text{Speed} \times \text{Time}) = \left(\frac{50}{3} \times 9\right) \text{m} = 150 \text{ m.}$$

2. A train 125 m long passes a man, running at 5 km/hr in the same direction in which the train is going, in 10 seconds. The speed of the train is:
   A. 45 km/hr
   B. 50 km/hr
   C. 54 km/hr
   D. 55 km/hr
   Answer & Explanation

   Answer: Option **B**

   Explanation:

   $$\text{Speed of the train relative to man} = \left(\frac{125}{10}\right) \text{m/sec}$$

   $$= \left(\frac{25}{2}\right) \text{m/sec.}$$

   $$= \left(\frac{25}{2} \times \frac{18}{5}\right) \text{km/hr}$$

   $$= 45 \text{ km/hr.}$$

   Let the speed of the train be x km/hr. Then, relative speed = $(x - 5)$ km/hr.

   $$\therefore x - 5 = 45 \quad \Rightarrow \quad x = 50 \text{ km/hr.}$$

3. The length of the bridge, which a train 130 metres long and travelling at 45 km/hr can cross in 30 seconds, is:
   A. 200 m
   B. 225 m
   C. 245 m
   D. 250 m
   Answer & Explanation

   Answer: Option **C**

   Explanation:

   $$\text{Speed} = \left(45 \times \frac{5}{18}\right) \text{m/sec} = \left(\frac{25}{2}\right) \text{m/sec.}$$

   Time = 30 sec.

   Let the length of bridge be x metres.

   Then, $\dfrac{130 + x}{30} = \dfrac{25}{2}$

   $$\Rightarrow 2(130 + x) = 750$$

   $$\Rightarrow x = 245 \text{ m.}$$

4. Two trains running in opposite directions cross a man standing on the platform in 27 seconds and 17 seconds respectively and they cross each other in 23 seconds. The ratio of their speeds is:
   A. 1 : 3
   B. 3 : 2
   C. 3 : 4
   D. None of these
   Answer & Explanation

   Answer: Option **B**

   Explanation:

   Let the speeds of the two trains be x m/sec and y m/sec respectively.

   Then, length of the first train = $27x$ metres,

   and length of the second train = $17y$ metres.

   $$\therefore \frac{27x + 17y}{x + y} = 23$$

   $$\Rightarrow 27x + 17y = 23x + 23y$$

$\Rightarrow 4x = 6y$

$\Rightarrow \dfrac{x}{y} = \dfrac{3}{2}.$

5. A train passes a station platform in 36 seconds and a man standing on the platform in 20 seconds. If

A.120 m   B.240 m
C.300 m   D.None of these
Answer & Explanation

Answer: Option **B**

Explanation:

$\text{Speed} = \left(54 \times \dfrac{5}{18} \right) \text{m/sec} = 15 \text{ m/sec}.$

Length of the train = (15 x 20)m = 300 m.

Let the length of the platform be x metres.

Then, $\dfrac{x + 300}{36} = 15$

$\Rightarrow x + 300 = 540$

$\Rightarrow x = 240$ m.

6. A train 240 m long passes a pole in 24 seconds. How long will it take to pass a platform 650 m long?
A.65 sec   B.89 sec
C.100 sec   D.150 sec
Answer & Explanation

Answer: Option **B**

Explanation:

$\text{Speed} = \left(\dfrac{240}{24} \right) \text{m/sec} = 10 \text{ m/sec}.$
$\therefore$ Required time $= \left(240 + 650 \right)$

the speed of the train is 54 km/hr, what is the length of the platform?

10

7. Two trains of equal length are running on parallel lines in the same direction at 46 km/hr and 36 km/hr. The faster train passes the slower train in 36 seconds. The length of each train is:
A.50 m   B.72 m
C.80 m   D.82 m
Answer & Explanation

Answer: Option **A**

Explanation:

Let the length of each train be x metres.

Then, distance covered = $2x$ metres.

Relative speed = (46 - 36) km/hr

$= \left(10 \times \dfrac{5}{18} \right) \text{m/sec}$

$= \left(\dfrac{25}{9} \right) \text{m/sec}$

$\therefore \dfrac{2x}{36} = \dfrac{25}{9}$

$\Rightarrow 2x = 100$

$\Rightarrow x = 50.$

8. A train 360 m long is running at a speed of 45 km/hr. In what time will it pass a bridge 140 m long?
A.40 sec   B.42 sec
C.45 sec   D.48 sec

Answer & Explanation

Answer: Option **A**

Explanation:

Formula for converting from km/hr to m/s: X km/hr = $\left(X \times \dfrac{5}{18}\right)$ m/s.

Therefore, Speed = $\left(45 \times \dfrac{5}{18}\right)_{m/sec}$ = $\dfrac{25}{2}$ m/sec.

Total distance to be covered = (360 + 140) m = 500 m.

Formula for finding Time = $\left(\dfrac{Distance}{Speed}\right)$

∴ Required time = $\left(\dfrac{500 \times 2}{25}\right)_{sec}$ = 40 sec.

9. Two trains are moving in opposite directions @ 60 km/hr and 90 km/hr. Their lengths are 1.10 km and 0.9 km respectively. The time taken by the slower train to cross the faster train in seconds is:
A. 36   B. 45
C. 48   D. 49
Answer & Explanation

Answer: Option **C**

Explanation:

Relative speed = (60+ 90) km/hr

= $\left(150 \times \dfrac{5}{18}\right)_{m/sec}$

= $\left(\dfrac{125}{3}\right)_{m/sec.}$

Distance covered = (1.10 + 0.9) km = 2 km = 2000 m.

Required time = $\left(2000 \times \dfrac{3}{125}\right)_{sec}$ = 48 sec.

10. A jogger running at 9 kmph alongside a railway track in 240 metres ahead of the engine of a 120 metres long train running at 45 kmph in the same direction. In how much time will the train pass the jogger?
A. 3.6 sec   B. 18 sec
C. 36 sec   D. 72 sec
Answer & Explanation

Answer: Option **C**

Explanation:

Speed of train relative to jogger = (45 - 9) km/hr = 36 km/hr.

= $\left(36 \times \dfrac{5}{18}\right)_{m/sec}$

= 10 m/sec.

Distance to be covered = (240 + 120) m = 360 m.

∴ Time taken = $\left(\dfrac{360}{}\right)_{sec}$ = 36 sec.

11. A 270 metres long train running at the speed of 120 kmph crosses another train running in opposite direction at the speed of 80 kmph in 9 seconds. What is the length of the other train?
A. 230 m   B. 240 m
C. 260 m   D. 320 m
E. None of these
Answer & Explanation

Answer: Option **A**

Explanation:

Relative speed = (120 + 80) km/hr

= $\left(200 \times \dfrac{5}{18}\right)_{m/sec}$

= $\left(\dfrac{500}{9}\right)_{m/sec.}$

Let the length of the other train be x metres.

Then, $\dfrac{x + 270}{9} = \dfrac{500}{9}$

$\Rightarrow x + 270 = 500$

$\Rightarrow x = 230.$

12. A goods train runs at the speed of 72 kmph and crosses a 250 m long platform in 26 seconds. What is the length of the goods train?
A. 230 m
B. 240 m
C. 260 m
D. 270 m

Answer & Explanation

Answer: Option **D**

Explanation:

$\text{Speed} = \left(72 \times \dfrac{5}{18}\right)_{\text{m/sec}} = 20 \text{ m/sec.}$

Time = 26 sec.

Let the length of the train be x metres.

Then, $\dfrac{x + 250}{26} = 20$

$\Rightarrow x + 250 = 520$

$\Rightarrow x = 270.$

13. Two trains, each 100 m long, moving in opposite directions, cross each other in 8 seconds. If one is moving twice as fast the other, then the speed of the faster train is:
A. 30 km/hr
B. 45 km/hr
C. 60 km/hr
D. 75 km/hr

Answer & Explanation

Answer: Option **C**

Explanation:

Let the speed of the slower train be x m/sec.

Then, speed of the faster train = $2x$ m/sec.

Relative speed = $(x + 2x)$ m/sec = $3x$ m/sec.

$\therefore \dfrac{(100 + 100)}{8} = 3x$

$\Rightarrow 24x = 200$

$\Rightarrow x = \dfrac{25}{3}.$

So, speed of the faster train = $\dfrac{50}{3}$ m/sec

$= \left(\dfrac{50}{3} \times \dfrac{18}{5}\right)$ km/hr

$= 60$ km/hr.

14. Two trains 140 m and 160 m long run at the speed of 60 km/hr and 40 km/hr respectively in opposite directions on parallel tracks. The time (in seconds) which they take to cross each other, is:
A. 9
B. 9.6
C. 10
D. 10.8

Answer & Explanation

Answer: Option **D**

Explanation:

Relative speed = $(60 + 40)$ km/hr = $\left(100 \times \dfrac{5}{18}\right)_{\text{m/sec}} = \left(\dfrac{250}{9}\right)_{\text{m/sec.}}$

Distance covered in crossing each other = $(140 + 160)$ m = 300 m.

Required time $= \left(300 \times \dfrac{9}{250}\right)_{\text{sec}} = \dfrac{54}{5}$ sec = 10.8 sec.

15. A train 110 metres long is running with a speed of 60 kmph. In what time will it pass a man who is running at 6 kmph in the direction opposite to that in which the train is going?
A. 5 sec
B. 6 sec
C. 7 sec
D. 10 sec

Answer & Explanation

Answer: Option **B**

Explanation:

Speed of train relative to man = (60 + 6)
km/hr = 66 km/hr.

$$= \left(66 \times \frac{5}{18}\right) \text{m/sec}$$

$$= \left(\frac{55}{3}\right) \text{m/sec.}$$

∴ Time taken to pass the man = $\left(110 \times \frac{3}{55}\right)$ sec = 6 sec.

16. A train travelling at a speed of 75 mph enters a tunnel $3\frac{1}{2}$ miles long. The train is $\frac{1}{4}$ mile long. How long does it take for the train to pass through the tunnel from the moment the front enters to the moment the rear emerges?
A. 2.5 min   B. 3 min
C. 3.2 min   D. 3.5 min
Answer & Explanation

Answer: Option **B**

Explanation:

Total distance covered = $\left(\frac{7}{2} + \frac{1}{4}\right)$ miles

$$= \frac{15}{4} \text{miles.}$$

∴ Time taken = $\left(\frac{15}{4 \times 75}\right)$ hrs

$$= \frac{1}{20} \text{hrs}$$

$$= \left(\frac{1}{20} \times 60\right) \text{min.}$$

$$= 3 \text{ min.}$$

17. A train 800 metres long is running at a speed of 78 km/hr. If it crosses a tunnel in 1 minute, then the length of the tunnel (in meters) is:
A. 130   B. 360
C. 500   D. 540
Answer & Explanation

Answer: Option **C**

Explanation:

$$\text{Speed} = \left(78 \times \frac{5}{18}\right) \text{m/sec} = \left(\frac{65}{3}\right) \text{m/sec.}$$

Time = 1 minute = 60 seconds.

Let the length of the tunnel be x metres.

Then, $\left(\frac{800 + x}{60}\right) = \frac{65}{3}$

$$\Rightarrow 3(800 + x) = 3900$$

$$\Rightarrow x = 500.$$

18. A 300 metre long train crosses a platform in 39 seconds while it crosses a signal pole in 18 seconds. What is the length of the platform?
A. 320 m   B. 350 m
C. 650 m   D. Data inadequate
Answer & Explanation

Answer: Option **B**

Explanation:

$$\text{Speed} = \left(\frac{300}{}\right) \text{m/sec} = 50 \text{m/sec.}$$

18   3

Let the length of the platform be x metres.

Then, $\left(\dfrac{x+300}{39}\right) = \dfrac{50}{3}$

$\Rightarrow 3(x+300) = 1950$

$\Rightarrow x = 350$ m.

19. A train speeds past a pole in 15 seconds and a platform 100 m long in 25 seconds. Its length is:

A.50 m   B.150 m
C.200 m   D.Data inadequate

Answer & Explanation

Answer: Option **B**

Explanation:

Let the length of the train be x metres and its speed by y m/sec.

Then, $\dfrac{x}{y} = 15 \quad \Rightarrow \quad y = \dfrac{x}{15}$.

$\therefore \dfrac{x+100}{25} = \dfrac{x}{15}$

$\Rightarrow 15(x+100) = 25x$

$\Rightarrow 15x + 1500 = 25x$

$\Rightarrow 1500 = 10x$

$\Rightarrow x = 150$ m.

20. A train moves past a telegraph post and a bridge 264 m long in 8 seconds and 20 seconds respectively. What is the speed of the train?

A.69.5 km/hr   B.70 km/hr
C.79 km/hr   D.79.2 km/hr

Answer & Explanation

Answer: Option **D**

Explanation:

Let the length of the train be x metres and its speed by y m/sec.

Then, $\dfrac{x}{y} = 8 \quad \Rightarrow \quad x = 8y$

Now, $\dfrac{x+264}{20} = y$

$\Rightarrow 8y + 264 = 20y$

$\Rightarrow y = 22$.

$\therefore$ Speed = 22 m/sec = $\left(22 \times \dfrac{18}{5}\right)$ km/hr = 79.2 km/hr.

21. How many seconds will a 500 metre long train take to cross a man walking with a speed of 3 km/hr in the direction of the moving train if the speed of the train is 63 km/hr?

A.25   B.30
C.40   D.45

Answer & Explanation

Answer: Option **B**

Explanation:

Speed of the train relative to man = (63 - 3) km/hr

= 60 km/hr

= $\left(60 \times \dfrac{5}{18}\right)$ m/sec

= $\left(\dfrac{50}{3}\right)$ m/sec.

$\therefore$ Time taken to pass the man = $\left(500 \times \dfrac{3}{50}\right)$ sec

= 30 sec.

22. Two goods train each 500 m long, are running in opposite directions on parallel tracks. Their speeds are 45 km/hr and 30 km/hr respectively. Find the time taken by the slower train to pass the driver of the faster one.

A.12 sec   B.24 sec
C.48 sec   D.60 sec

Answer & Explanation

Answer: Option **B**

Explanation:

Relative speed = (45 + 30) km/hr

$$= \left(75 \times \frac{5}{18}\right) \text{m/sec}$$

$$= \left(\frac{125}{6}\right) \text{m/sec.}$$

We have to find the time taken by the slower train to pass the DRIVER of the faster train and not the complete train.

So, distance covered = Length of the slower train.

Therefore, Distance covered = 500 m.

$$\therefore \text{Required time} = \left(500 \times \frac{6}{125}\right) = 24 \text{ sec.}$$

23. Two trains are running in opposite directions with the same speed. If the length of each train is 120 metres and they cross each other in 12 seconds, then the speed of each train (in km/hr) is:
A.10   B.18
C.36   D.72
Answer & Explanation

Answer: Option **C**

Explanation:

Let the speed of each train be x m/sec.

Then, relative speed of the two trains = $2x$ m/sec.

So, $2x = \dfrac{(120 + 120)}{12}$

$\Rightarrow 2x = 20$

$\Rightarrow x = 10.$

$\therefore$ Speed of each train = 10 m/sec = $\left(10 \times \dfrac{18}{5}\right)$ km/hr = 36 km/hr.

24. Two trains of equal lengths take 10 seconds and 15 seconds respectively to cross a telegraph post. If the length of each train be 120 metres, in what time (in seconds) will they cross each other travelling in opposite direction?
A.10   B.12
C.15   D.20
Answer & Explanation

Answer: Option **B**

Explanation:

Speed of the first train = $\left(\dfrac{120}{10}\right)$ m/sec = 12 m/sec.

Speed of the second train = $\left(\dfrac{120}{15}\right)$ m/sec = 8 m/sec.

Relative speed = (12 + 8) = 20 m/sec.

$\therefore$ Required time = $\left[\dfrac{(120 + 120)}{20}\right]$ sec = 12 sec.

25. A train 108 m long moving at a speed of 50 km/hr crosses a train 112 m long coming from opposite direction in 6 seconds. The speed of the second train is:
A.48 km/hr   B.54 km/hr
C.66 km/hr   D.82 km/hr
Answer & Explanation

Answer: Option **D**

Explanation:

Let the speed of the second train be x km/hr.

Relative speed = $(x + 50)$ km/hr

$$= \left[(x + 50) \times \frac{5}{18}\right] \text{m/sec}$$

$$= \left[\frac{250 + 5x}{18}\right] \text{m/sec.}$$

Distance covered = (108 + 112) = 220 m.

$\therefore \quad 220 \quad = 6$

$$\begin{pmatrix} 250 + 5x \\ 18 \end{pmatrix}$$

$$\Rightarrow 250 + 5x = 660$$

$$\Rightarrow x = 82 \text{ km/hr.}$$

26. Two trains are running at 40 km/hr and 20 km/hr respectively in the same direction. Fast train completely passes a man sitting in the slower train in 5 seconds. What is the length of the fast train?

A. 23 m

B. $23\frac{2}{9}$ m

C. $27\frac{7}{9}$ m

D. 29 m

Answer & Explanation

Answer: Option **C**

Explanation:

Relative speed = (40 - 20) km/hr = $\left(20 \times \frac{5}{18}\right)$ m/sec = $\left(\frac{50}{9}\right)$ m/sec.

$\therefore$ Length of faster train = $\left(\frac{50}{9} \times 5\right)$ m = $\frac{250}{9}$ m = $27\frac{7}{9}$ m.

27. A train overtakes two persons who are walking in the same direction in which the train is going, at the rate of 2 kmph and 4 kmph and passes them completely in 9 and 10 seconds respectively. The length of the train is:

A. 45 m

B. 50 m

C. 54 m

D. 72 m

Answer & Explanation

Answer: Option **B**

Explanation:

2 kmph = $\left(2 \times \frac{5}{18}\right)$ m/sec = $\frac{5}{9}$ m/sec.

4 kmph = $\left(4 \times \frac{5}{18}\right)$ m/sec = $\frac{10}{9}$ m/sec.

Let the length of the train be x metres and its speed by y m/sec.

Then, $\left(\dfrac{x}{y - \frac{5}{9}}\right) = 9$ and $\left(\dfrac{x}{y - \frac{10}{9}}\right) = 10$.

$\therefore 9y - 5 = x$ and $10(9y - 10) = 9x$

$\Rightarrow 9y - x = 5$ and $90y - 9x = 100$.

On solving, we get: $x = 50$.

$\therefore$ Length of the train is 50 m.

28. A train overtakes two persons walking along a railway track. The first one walks at 4.5 km/hr. The other one walks at 5.4 km/hr. The train needs 8.4 and 8.5 seconds respectively to overtake them. What is the speed of the train if both the persons are walking in the same direction as the train?

A. 66 km/hr

B. 72 km/hr

C. 78 km/hr

D. 81 km/hr

Answer & Explanation

Answer: Option **D**

Explanation:

4.5 km/hr = $\left(4.5 \times \frac{5}{18}\right)$ m/sec = $\frac{5}{4}$ m/sec = 1.25 m/sec, and

5.4 km/hr = $\left(5.4 \times \frac{5}{18}\right)$ m/sec = $\frac{3}{2}$ m/sec = 1.5 m/sec.

Let the speed of the train be x m/sec.

Then, $(x - 1.25) \times 8.4 = (x - 1.5) \times 8.5$

$\Rightarrow 8.4x - 10.5 = 8.5x - 12.75$

$\Rightarrow 0.1x = 2.25$

$\Rightarrow x = 22.5$

$\therefore$ Speed of the train = $\left(22.5 \times \frac{18}{5}\right)$ km/hr = 81 km/hr.

29. A train travelling at 48 kmph completely crosses another train having half its length and travelling in opposite direction at 42

kmph, in 12 seconds. It also passes a railway platform in 45 seconds. The length of the platform is

A. 400 m   B. 450 m
C. 560 m   D. 600 m

Answer & Explanation

Answer: Option **A**

Explanation:

Let the length of the first train be x metres.

Then, the length of the second train is $\left(\dfrac{x}{2}\right)$ metres.

Relative speed $= (48 + 42)$ kmph $= \left(90 \times \dfrac{5}{18}\right)$ m/sec $= 25$ m/sec.

$\therefore \dfrac{[x + (x/2)]}{25} = 12$ or $\dfrac{3x}{2} = 300$ or $x = 200$.

$\therefore$ Length of first train $= 200$ m.

Let the length of platform be y metres.

Speed of the first train $= \left(48 \times \dfrac{5}{18}\right)$ m/sec $= \dfrac{40}{3}$ m/sec.

$\therefore (200 + y) \times \dfrac{3}{40} = 45$

$\Rightarrow 600 + 3y = 1800$

$\Rightarrow y = 400$ m.

30. Two stations A and B are 110 km apart on a straight line. One train starts from A at 7 a.m. and travels towards B at 20 kmph. Another train starts from B at 8 a.m. and travels towards A at a speed of 25 kmph. At what time will they meet?

A. 9 a.m.   B. 10 a.m.
C. 10.30 a.m. D. 11 a.m.

Answer & Explanation

Answer: Option **B**

Explanation:

Suppose they meet x hours after 7 a.m.

Distance covered by A in x hours $= 20x$ km.

Distance covered by B in $(x - 1)$ hours $= 25(x - 1)$ km.

$\therefore 20x + 25(x - 1) = 110$

$\Rightarrow 45x = 135$

$\Rightarrow x = 3$.

So, they meet at 10 a.m.
Two, trains, one from Howrah to Patna and the other from Patna to Howrah, start simultaneously. After they meet, the trains reach their destinations after 9 hours and 16 hours respectively. The ratio of their speeds is:

A. 2 : 3   B. 4 : 3
C. 6 : 7   D. 9 : 16

Answer & Explanation
Answer: Option B
Explanation:
Let us name the trains as A and B. Then,
(A's speed) : (B's speed) = b : a = 16 : 9 = 4 : 3.

2) Time and Work

1. A can do a work in 15 days and B in 20 days. If they work on it together for 4 days, then the fraction of the work that is left is :

A. $\dfrac{1}{4}$ B. $\dfrac{1}{10}$

C. $\dfrac{7}{15}$ D. $\dfrac{8}{15}$

Answer & Explanation

Answer: Option **D**

Explanation:

A's 1 day's work $=\dfrac{1}{15}$;

B's 1 day's work $=\dfrac{1}{20}$;

(A + B)'s 1 day's work $=\left(\dfrac{1}{15}+\dfrac{1}{20}\right)=\dfrac{7}{60}.$

(A + B)'s 4 day's work $=\left(\dfrac{7}{60}\text{ x }4\right)=\dfrac{7}{15}.$

Therefore, Remaining work $=\left(1-\dfrac{7}{15}\right)=\dfrac{8}{15}.$

2. A can lay railway track between two given stations in 16 days and B can do the same job in 12 days. With help of C, they did the job in 4 days only. Then, C alone can do the job in:

A. $9\dfrac{1}{5}$days   B. $9\dfrac{2}{5}$days

C. $9\dfrac{3}{5}$days   D.10

<u>Answer & Explanation</u>

Answer: Option **C**

Explanation:

(A + B + C)'s 1 day's work $=\dfrac{1}{4},$

A's 1 day's work $=\dfrac{1}{16},$

B's 1 day's work $=\dfrac{1}{12}.$

∴ C's 1 day's work $=\dfrac{1}{4}-\left(\dfrac{1}{16}+\dfrac{1}{12}\right)=\left(\dfrac{1}{4}-\dfrac{7}{48}\right)=\dfrac{5}{48}.$

So, C alone can do the work in $\dfrac{48}{5}=9\dfrac{3}{5}$days.

3. A, B and C can do a piece of work in 20, 30 and 60 days respectively. In how many days can A do the work if he is assisted by B and C on every third day?
A. 12 days   B. 15 days
C. 16 days   D. 18 days
<u>Answer & Explanation</u>

Answer: Option **B**

Explanation:

A's 2 day's work $=\left(1\text{ x }2\right)=1$.

(A + B + C)'s 1 day's work $=\left(\dfrac{1}{\overset{20}{20}}+\dfrac{1}{\overset{10}{30}}+\dfrac{1}{60}\right)=\dfrac{6}{60}=\dfrac{1}{10}.$

Work done in 3 days $=\left(\dfrac{1}{10}+\dfrac{1}{10}\right)=\dfrac{1}{5}.$

Now, $\dfrac{1}{5}$work is done in 3 days.

∴ Whole work will be done in (3 x 5) = 15 days.

4. A is thrice as good as workman as B and therefore is able to finish a job in 60 days less than B. Working together, they can do it in:

A. 20 days   B. $22\dfrac{1}{2}$days

C. 25 days   D. 30 days
<u>Answer & Explanation</u>

Answer: Option **B**

Explanation:

Ratio of times taken by A and B = 1 : 3.

The time difference is (3 - 1) 2 days while B take 3 days and A takes 1 day.

If difference of time is 2 days, B takes 3 days.

If difference of time is 60 days, B takes $\left(\dfrac{3\text{ x }60}{2}\right)=90$ days.

So, A takes 30 days to do the work.

A's 1 day's work $=\dfrac{1}{30}$

B's 1 day's work $=\dfrac{1}{90}$

(A + B)'s 1 day's work $=\left(\dfrac{1}{30}+\dfrac{1}{90}\right)=\dfrac{4}{90}=\dfrac{2}{45}$

∴ A and B together can do the work in $\dfrac{45}{2}=22\dfrac{1}{2}$days.

5. A alone can do a piece of work in 6 days and B alone in 8 days. A and B undertook to do it for Rs. 3200. With the help of C, they completed the work in 3 days. How much is to be paid to C?

A.Rs. 375   B.Rs. 400
C.Rs. 600   D.Rs. 800
Answer & Explanation

Answer: Option **B**

Explanation:

C's 1 day's work $= \dfrac{1}{3} - \left(\dfrac{1}{6} + \dfrac{1}{8}\right) = \dfrac{1}{3} - \dfrac{7}{24} = \dfrac{1}{24}.$

A's wages : B's wages : C's wages $= \dfrac{1}{6} : \dfrac{1}{8} : \dfrac{1}{24} = 4 : 3 : 1.$

∴ C's share (for 3 days) = Rs. $\left(\dfrac{3 \times 1}{x \times 3200}\right)$ = Rs. 400.

6. If 6 men and 8 boys can do a piece of work in 10 days while 26 men and 48 boys can do the same in 2 days, the time taken by 15 men and 20 boys in doing the same type of work will be:
A.4 days   B.5 days
C.6 days   D.7 days
Answer & Explanation

Answer: Option **A**

Explanation:

Let 1 man's 1 day's work = x and 1 boy's 1 day's work = y.

Then, $6x + 8y = \dfrac{1}{10}$ and $26x + 48y = \dfrac{1}{2}.$

Solving these two equations, we get : $x = \dfrac{1}{100}$ and $y = \dfrac{1}{200}.$

(15 men + 20 boy)'s 1 day's work $= \left(\dfrac{15}{100} + \dfrac{20}{200}\right) = \dfrac{1}{4}.$

∴ 15 men and 20 boys can do the work in 4 days.

7. A can do a piece of work in 4 hours; B and C together can do it in 3 hours, while A and C together can do it in 2 hours. How long will B alone take to do it?
A.8 hours   B.10 hours
C.12 hours   D.24 hours
Answer & Explanation

Answer: Option **C**

Explanation:

A's 1 hour's work $= \dfrac{1}{4};$

(B + C)'s 1 hour's work $= \dfrac{1}{3};$

(A + C)'s 1 hour's work $= \dfrac{1}{2}.$

(A + B + C)'s 1 hour's work $= \left(\dfrac{1}{4} + \dfrac{1}{3}\right) = \dfrac{7}{12}.$

B's 1 hour's work $= \left(\dfrac{7}{12} - \dfrac{1}{2}\right) = \dfrac{1}{12}.$

∴ B alone will take 12 hours to do the work.

8. A can do a certain work in the same time in which B and C together can do it. If A and B together could do it in 10 days and C alone in 50 days, then B alone could do it in:
A.15 days   B.20 days
C.25 days   D.30 days
Answer & Explanation

Answer: Option **C**

Explanation:

(A + B)'s 1 day's work $= \dfrac{1}{10}$

C's 1 day's work $= \dfrac{1}{50}$

(A + B + C)'s 1 day's work $= \left(\dfrac{1}{10} + \dfrac{1}{50}\right) = \dfrac{6}{50} = \dfrac{3}{25}.$ .... (i)

A's 1 day's work = (B + C)'s 1 day's work .... (ii)

From (i) and (ii), we get: 2 x (A's 1 day's work) = $\dfrac{3}{25}$

⇒ A's 1 day's work $= \dfrac{3}{50}.$

∴ B's 1 day's work $\left(\dfrac{1}{10} - \dfrac{3}{50}\right) = \dfrac{2}{50} = \dfrac{1}{25}.$

So, B alone could do the work in 25 days.

9. A does 80% of a work in 20 days. He then calls in B and they together finish the remaining work in 3 days. How long B alone

would take to do the whole work?

A. 23 days   B. 37 days

C. $37\frac{1}{2}$ D. 40 days

Answer & Explanation

Answer: Option **C**

Explanation:

Whole work is done by A in $\left(\dfrac{20}{x}\times\dfrac{5}{4}\right)=25$ days.

Now, $\left(\dfrac{1}{-}\dfrac{4}{5}\right)$ i.e., $\dfrac{1}{5}$ work is done by A and B in 3 days.

Whole work will be done by A and B in (3 x 5) = 15 days.

A's 1 day's work $=\dfrac{1}{25}$, (A + B)'s 1 day's work $=\dfrac{1}{15}$.

$\therefore$ B's 1 day's work $=\left(\dfrac{1}{15}-\dfrac{1}{25}\right)=\dfrac{4}{150}=\dfrac{2}{75}$.

So, B alone would do the work in $\dfrac{75}{2}=37\dfrac{1}{2}$ days.

10. A machine P can print one lakh books in 8 hours, machine Q can print the same number of books in 10 hours while machine R can print them in 12 hours. All the machines are started at 9 A.M. while machine P is closed at 11 A.M. and the remaining two machines complete work. Approximately at what time will the work (to print one lakh books) be finished ?

A. 11:30 A.M.   B. 12 noon

C. 12:30 P.M.   D. 1:00 P.M.

Answer & Explanation

Answer: Option **D**

Explanation:

(P + Q + R)'s 1 hour's work $=\left(\dfrac{1}{8}+\dfrac{1}{10}+\dfrac{1}{12}\right)=\dfrac{37}{120}$.

Work done by P, Q and R in 2 hours $=\left(\dfrac{37}{120}\times2\right)=\dfrac{37}{60}$.

Remaining work $=\left(1-\dfrac{37}{60}\right)=\dfrac{23}{60}$.

(Q + R)'s 1 hour's work $=\left(\dfrac{1}{10}+\dfrac{1}{12}\right)=\dfrac{11}{60}$.

Now, $\dfrac{11}{60}$ work is done by Q and R in 1 hour.

So, $\dfrac{23}{60}$ work will be done by Q and R in $\left(\dfrac{60}{11}\times\dfrac{23}{60}\right)=\dfrac{23}{11}$ hours $\approx$ 2 hours.

So, the work will be finished approximately 2 hours after 11 A.M., i.e., around 1 P.M.

11. A can finish a work in 18 days and B can do the same work in 15 days. B worked for 10 days and left the job. In how many days, A alone can finish the remaining work?

A. 5   B. $5\frac{1}{2}$

C. 6   D. 8

Answer & Explanation

Answer: Option **C**

Explanation:

B's 10 day's work $=\left(\dfrac{1}{15}\times10\right)=\dfrac{2}{3}$.

Remaining work $=\left(1-\dfrac{2}{3}\right)=\dfrac{1}{3}$.

Now, $\dfrac{1}{18}$ work is done by A in 1 day.

$\therefore$ $\dfrac{1}{3}$ work is done by A in $\left(18\times\dfrac{1}{3}\right)=$ 6 days.

12. 4 men and 6 women can complete a work in 8 days, while 3 men and 7 women can complete it in 10 days. In how many days will 10 women complete it?

A. 35   B. 40

C. 45   D. 50

Answer & Explanation

Answer: Option **B**

Explanation:

Let 1 man's 1 day's work = x and 1 woman's 1 day's work = y.

Then, $4x + 6y =\dfrac{1}{8}$ and $3x + 7y =\dfrac{1}{10}$.

Solving the two equations, we get: $x = \dfrac{11}{400}$, $y = \dfrac{1}{400}$

∴ 1 woman's 1 day's work $= \dfrac{1}{400}$.

⇒10 women's 1 day's work $= \left(\dfrac{1}{400} \times 10\right) = \dfrac{1}{40}$.

Hence, 10 women will complete the work in 40 days.

13. A and B can together finish a work 30 days. They worked together for 20 days and then B left. After another 20 days, A finished the remaining work. In how many days A alone can finish the work?

A.40　　　　　　　　B.50
C.54　　　　　　　　D.60
Answer & Explanation

Answer: Option **D**

Explanation:

(A + B)'s 20 day's work $= \left(\dfrac{1}{30} \times 20\right) = \dfrac{2}{3}$.

Remaining work $= \left(1 - \dfrac{2}{3}\right) = \dfrac{1}{3}$.

Now, $\dfrac{1}{3}$ work is done by A in 20 days.

Therefore, the whole work will be done by A in (20 x 3) = 60 days.

14. P can complete a work in 12 days working 8 hours a day. Q can complete the same work in 8 days working 10 hours a day. If both P and Q work together, working 8 hours a day, in how many days can they complete the work?

A.$5\dfrac{5}{11}$　　　　　　B.$5\dfrac{6}{11}$
C.$6\dfrac{5}{11}$　　　　　　D.$6\dfrac{6}{11}$
Answer & Explanation

Answer: Option **A**

Explanation:

P can complete the work in (12 x 8) hrs. = 96 hrs.

Q can complete the work in (8 x 10) hrs. = 80 hrs.

∴ P's1 hour's work $= \dfrac{1}{96}$ and Q's 1 hour's work $= \dfrac{1}{80}$.

(P + Q)'s 1 hour's work $= \left(\dfrac{1}{96} + \dfrac{1}{80}\right) = \dfrac{11}{480}$.

So, both P and Q will finish the work in $\left(\dfrac{480}{11}\right)$ hrs.

∴ Number of days of 8 hours each $= \left(\dfrac{480}{11} \times \dfrac{1}{8}\right) = \dfrac{60}{11}$ days $= 5\dfrac{5}{11}$ days.

15. 10 women can complete a work in 7 days and 10 children take 14 days to complete the work. How many days will 5 women and 10 children take to complete the work?

A.3　　　　　　　　B.5
C.7　　　　　　　　D.Cannot be determined
E.None of these
Answer & Explanation

Answer: Option **C**

Explanation:

1 woman's 1 day's work $= \dfrac{1}{70}$

1 child's 1 day's work $= \dfrac{1}{140}$

(5 women + 10 children)'s day's work $= \left(\dfrac{5}{70} + \dfrac{10}{140}\right) = \left(\dfrac{1}{14} + \dfrac{1}{14}\right) = \dfrac{1}{7}$

∴ 5 women and 10 children will complete the work in 7 days.

16. X and Y can do a piece of work in 20 days and 12 days respectively. X started the work alone and then after 4 days Y joined him till the completion of the work. How long did the work last?

A.6 days　　　　　　B.10 days
C.15 days　　　　　　D.20 days
Answer & Explanation

Answer: Option **B**

Explanation:

Work done by X in 4 days $= \left(\dfrac{1}{20} \text{x } 4\right) = \dfrac{1}{5}$.

Remaining work $= \left(1 - \dfrac{1}{5}\right) = \dfrac{4}{5}$.

(X + Y)'s 1 day's work $= \left(\dfrac{1}{20} + \dfrac{1}{12}\right) = \dfrac{8}{60} = \dfrac{2}{15}$.

Now, $\dfrac{2}{15}$ work is done by X and Y in 1 day.

So, $\dfrac{4}{5}$ work will be done by X and Y in $\left(\dfrac{15}{2} \text{x} \dfrac{4}{5}\right) = 6$ days.

Hence, total time taken = (6 + 4) days = 10 days.

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17. A is 30% more efficient than B. How much time will they, working together, take to complete a job which A alone could have done in 23 days?
A.11 days   B.13 days
C.$20\dfrac{3}{17}$days   D.None of these
<u>Answer & Explanation</u>

Answer: Option **B**

Explanation:

Ratio of times taken by A and B = 100 : 130 = 10 : 13.

Suppose B takes x days to do the work.

Then, 10 : 13 :: 23 : x $\Rightarrow$ $x = \left(\dfrac{23 \text{ x } 13}{10}\right)$ $\Rightarrow$ $x = \dfrac{299}{10}$.

A's 1 day's work $= \dfrac{1}{23}$;

B's 1 day's work $= \dfrac{10}{299}$.

(A + B)'s 1 day's work $= \left(\dfrac{1}{23} + \dfrac{10}{299}\right) = \dfrac{23}{299} = \dfrac{1}{13}$.

Therefore, A and B together can complete the work in 13 days.

---

18. Ravi and Kumar are working on an assignment. Ravi takes 6 hours to type 32 pages on a computer, while Kumar takes 5 hours to type 40 pages. How much time will they take, working together on two different computers to type an assignment of 110 pages?
A.7 hours 30 minutes   B.8 hours
C.8 hours 15 minutes   D.8 hours 25 minutes
<u>Answer & Explanation</u>

Answer: Option **C**

Explanation:

Number of pages typed by Ravi in 1 hour $= \dfrac{32}{6} = \dfrac{16}{3}$.

Number of pages typed by Kumar in 1 hour $= \dfrac{40}{5} = 8$.

Number of pages typed by both in 1 hour $= \left(\dfrac{16}{3} + 8\right) = \dfrac{40}{3}$.

$\therefore$ Time taken by both to type 110 pages $= \left(110 \text{ x } \dfrac{3}{40}\right)$ hours

$= 8\dfrac{1}{4}$ hours (or) 8 hours 15 minutes.

---

19. A, B and C can complete a piece of work in 24, 6 and 12 days respectively. Working together, they will complete the same work in:
A.$\dfrac{1}{24}$day   B.$\dfrac{7}{24}$day
C.$3\dfrac{3}{7}$days   D.4 days
<u>Answer & Explanation</u>

Answer: Option **C**

Explanation:

Formula: If A can do a piece of work in n days, then A's 1 day's work $= \dfrac{1}{n}$.

(A + B + C)'s 1 day's work $\left(\dfrac{1}{24} + \dfrac{1}{6} + \dfrac{1}{12}\right) = \dfrac{7}{24}$.

$=$ 24 6 12 24

Formula: If A's 1 day's work $=\dfrac{1}{n}$, then A can finish the work in n days.

So, all the three together will complete the job in $\left(\dfrac{24}{7}\right) = 3\dfrac{3}{7}$ days.

20. Sakshi can do a piece of work in 20 days. Tanya is 25% more efficient than Sakshi. The number of days taken by Tanya to do the same piece of work is:
A.15   B.16
C.18   D.25
Answer & Explanation

Answer: Option **B**

Explanation:

Ratio of times taken by Sakshi and Tanya = 125 : 100 = 5 : 4.

Suppose Tanya takes x days to do the work.

$5 : 4 :: 20 : x \implies x = \left(\dfrac{4 \times 20}{5}\right)$

$\implies x = 16$ days.

Hence, Tanya takes 16 days to complete the work.

21. A takes twice as much time as B or thrice as much time as C to finish a piece of work. Working together, they can finish the work in 2 days. B can do the work alone in:
A.4 days   B.6 days
C.8 days   D.12 days
Answer & Explanation

Answer: Option **B**

Explanation:

Suppose A, B and C take x, $\dfrac{x}{2}$ and $\dfrac{x}{3}$ days respectively to finish the work.

Then, $\left(\dfrac{1}{x}+\dfrac{2}{x}+\dfrac{3}{x}\right)=\dfrac{1}{2}$

$\implies \dfrac{6}{x}=\dfrac{1}{2}$

$\implies x = 12$.

So, B takes $(12/2) = 6$ days to finish the work.

22. A and B can complete a work in 15 days and 10 days respectively. They started doing the work together but after 2 days B had to leave and A alone completed the remaining work. The whole work was completed in :
A.8 days   B.10 days
C.12 days   D.15 days
Answer & Explanation

Answer: Option **C**

Explanation:

$(A + B)\text{'s 1 day's work} = \left(\dfrac{1}{15}+\dfrac{1}{10}\right)=\dfrac{1}{6}.$

Work done by A and B in 2 days $= \left(\dfrac{1}{6} \times 2\right)=\dfrac{1}{3}.$

Remaining work $= \left(1 -\dfrac{1}{3}\right)=\dfrac{2}{3}.$

Now, $\dfrac{1}{15}$ work is done by A in 1 day.

$\therefore \dfrac{2}{3}$ work will be done by a in $\left(15 \times \dfrac{2}{3}\right) = 10$ days.

Hence, the total time taken = (10 + 2) = 12 days.

23. A and B can do a piece of work in 30 days, while B and C can do the same work in 24 days and C and A in 20 days. They all work together for 10 days when B and C leave. How many days more will A take to finish the work?
A.18 days   B.24 days
C.30 days   D.36 days
Answer & Explanation

Answer: Option **A**

Explanation:

$2(A + B + C)$'s 1 day's work $= \left(\dfrac{1}{30}+\dfrac{1}{24}+\dfrac{1}{20}\right)=\dfrac{15}{120}=\dfrac{1}{8}.$

Therefore, $(A + B + C)$'s 1 day's work $= \dfrac{1}{2} \times \dfrac{1}{8} =\dfrac{1}{16}.$

Work done by A, B, C in 10 days $=\dfrac{10}{16}=\dfrac{5}{8}.$

Remaining work $= \left(1 -\dfrac{5}{8}\right)=\dfrac{3}{8}.$

A's 1 day's work $= \left(\dfrac{1}{16}-\dfrac{1}{24}\right)=\dfrac{1}{48}.$

Now, $\dfrac{1}{48}$ work is done by A in 1 day.

So, $\dfrac{3}{8}$ work will be done by A in $\left(48 \times \dfrac{3}{8}\right) = 18$ days.

24. A works twice as fast as B. If B can complete a work in 12 days independently, the number of days in which A and B can together finish the work in :
A.4 days   B.6 days
C.8 days   D.18 days
Answer & Explanation

Answer: Option **A**

Explanation:

Ratio of rates of working of A and B = 2 : 1.

So, ratio of times taken = 1 : 2.

B's 1 day's work $=\dfrac{1}{12}.$

$\therefore$ A's 1 day's work $= \dfrac{1}{6}$; (2 times of B's work)

$(A + B)$'s 1 day's work $= \left(\dfrac{1}{6}+\dfrac{1}{12}\right)=\dfrac{3}{12}=\dfrac{1}{4}.$

So, A and B together can finish the work in 4 days.

25. Twenty women can do a work in sixteen days. Sixteen men can complete the same work in fifteen days. What is the ratio between the capacity of a man and a woman?
A.3 : 4   B.4 : 3
C.5 : 3   D.Data inadequate

Answer & Explanation

Answer: Option **B**

Explanation:

(20 x 16) women can complete the work in 1 day.

$\therefore$ 1 woman's 1 day's work $=\dfrac{1}{320}.$

(16 x 15) men can complete the work in 1 day.

$\therefore$ 1 man's 1 day's work $=\dfrac{1}{240}$

So, required ratio$=\dfrac{1}{240}:\dfrac{1}{320}$

$=\dfrac{1}{3}:\dfrac{1}{4}$

= 4 : 3 (cross multiplied)

26. A and B can do a work in 8 days, B and C can do the same work in 12 days. A, B and C together can finish it in 6 days. A and C together will do it in :
A.4 days   B.6 days
C.8 days   D.12 days
Answer & Explanation

Answer: Option **C**

Explanation:

$(A + B + C)$'s 1 day's work $=\dfrac{1}{6}$;

$(A + B)$'s 1 day's work $=\dfrac{1}{8}$;

$(B + C)$'s 1 day's work $=\dfrac{1}{12}.$

$\therefore$ $(A + C)$'s 1 day's work$= \left(2 \times \dfrac{1}{6}\right)-\left(\dfrac{1}{8}+\dfrac{1}{12}\right)$

$= \left(\dfrac{1}{3}-\dfrac{5}{24}\right)$

$=\dfrac{3}{24}$

$=\dfrac{1}{8}.$

So, A and C together will do the work in 8 days.

27. A can finish a work in 24 days, B in 9 days and C in 12 days. B and C start the work but are forced to leave after 3 days. The remaining work was done by A in:
A.5 days　　　　　　B.6 days
C.10 days　　　　　　D.$10\frac{1}{2}$days

Answer & Explanation

Answer: Option **C**

Explanation:

(B + C)'s 1 day's work $=\left(\frac{1}{9}+\frac{1}{12}\right)=\frac{7}{36}$.

Work done by B and C in 3 days $=\left(\frac{7}{36}\times 3\right)=\frac{7}{12}$.

Remaining work $=\left(1-\frac{7}{12}\right)=\frac{5}{12}$.

Now, $\frac{1}{24}$ work is done by A in 1 day.

So, $\frac{5}{12}$ work is done by A in $\left(24\times\frac{5}{12}\right)=10$ days.

28. X can do a piece of work in 40 days. He works at it for 8 days and then Y finished it in 16 days. How long will they together take to complete the work?
A.$13\frac{1}{3}$days　　　　　　B.15 days
C.20 days　　　　　　D.26 days
Answer & Explanation

Answer: Option **A**

Explanation:

Work done by X in 8 days $=\left(\frac{1}{40}\times 8\right)=\frac{1}{5}$.

Remaining work $=\left(1-\frac{1}{5}\right)=\frac{4}{5}$.

Now, $\frac{4}{5}$ work is done by Y in 16 days.

Whole work will be done $\left(16\times\frac{5}{4}\right)=20$

by Y in x 4 days.

∴ X's 1 day's work $=\frac{1}{40}$, Y's 1 day's work $=\frac{1}{20}$.

(X + Y)'s 1 day's work $=\left(\frac{1}{40}+\frac{1}{20}\right)=\frac{3}{40}$.

Hence, X and Y will together complete the work in $\left(\frac{40}{3}\right)=13\frac{1}{3}$days.

29. A and B can do a job together in 7 days. A is $1\frac{3}{4}$ times as efficient as B. The same job can be done by A alone in :
A.$9\frac{1}{3}$days　　　　　　B.11 days
C.$12\frac{1}{4}$days　　　　　　D.$16\frac{1}{3}$days
Answer & Explanation

Answer: Option **B**

Explanation:

(A's 1 day's work) : (B's 1 day's work) $=\frac{7}{4}:1=7:4$.

Let A's and B's 1 day's work be $7x$ and $4x$ respectively.

Then, $7x + 4x=\frac{1}{7}\Rightarrow 11x=\frac{1}{7}\Rightarrow x=\frac{1}{77}$.

∴ A's 1 day's work $=\left(\frac{1}{77}\times 7\right)=\frac{1}{11}$.

30. A and B together can do a piece of work in 30 days. A having worked for 16 days, B finishes the remaining work alone in 44 days. In how many days shall B finish the whole work alone?
A.30 days　　　　　　B.40 days
C.60 days　　　　　　D.70 days
Answer & Explanation

Answer: Option **C**

Explanation:

Let A's 1 day's work = x and B's 1 day's

work = y.

Then, $x + y = \dfrac{1}{30}$ and $16x + 44y = 1$.

Solving these two equations, we get: $x = \dfrac{1}{60}$ and $y = \dfrac{1}{60}$

$\therefore$ B's 1 day's work $= \dfrac{1}{60}$.

Hence, B alone shall finish the whole work in 60 days.

3) Profit and Loss

1. Alfred buys an old scooter for Rs. 4700 and spends Rs. 800 on its repairs. If he sells the scooter for Rs. 5800, his gain percent is:

A. $4\dfrac{4}{7}\%$ B. $5\dfrac{5}{11}\%$
C. 10%   D. 12%

Answer & Explanation

Answer: Option **B**

Explanation:

Cost Price (C.P.) = Rs. (4700 + 800) = Rs. 5500.

Selling Price (S.P.) = Rs. 5800.

Gain = (S.P.) - (C.P.) = Rs.(5800 - 5500) = Rs. 300.

Gain % $= \left(\dfrac{300}{5500} \times 100 \right)\% = 5\dfrac{5}{11}\%$

2. The cost price of 20 articles is the same as the selling price of x articles. If the profit is 25%, then the value of x is:

A. 15   B. 16
C. 18   D. 25

Answer & Explanation

Answer: Option **B**

Explanation:

Let C.P. of each article be Re. 1 C.P. of x articles = Rs. x.

S.P. of x articles = Rs. 20.

Profit = Rs. (20 - x).

$\therefore \left(\dfrac{20 - x}{x} \times 100 = 25 \right)$

$\Rightarrow 2000 - 100x = 25x$

$125x = 2000$

$\Rightarrow x = 16$.

3. If selling price is doubled, the profit triples. Find the profit percent.

A. $66\dfrac{2}{3}$ B. 100

C. $105\dfrac{1}{3}$ D. 120

Answer & Explanation

Answer: Option **B**

Explanation:

Let C.P. be Rs. x and S.P. be Rs. y.

Then, $3(y - x) = (2y - x) \Rightarrow y = 2x$.

Profit = Rs. $(y - x)$ = Rs. $(2x - x)$ = Rs. x.

$\therefore$ Profit % $= \left(\dfrac{x}{x} \times 100 \right)\% = 100\%$

4. In a certain store, the profit is 320% of the cost. If the cost increases by 25% but the selling price remains constant, approximately what percentage of the selling price is the profit?

A. 30%   B. 70%
C. 100%   D. 250%

Answer & Explanation

Answer: Option **B**

Explanation:

Let C.P.= Rs. 100. Then, Profit = Rs. 320, S.P. = Rs. 420.

New C.P. = 125% of Rs. 100 = Rs. 125

New S.P. = Rs. 420.

Profit = Rs. (420 - 125) = Rs. 295.

$$\therefore \text{Required percentage} = \left(\frac{295}{420}\times\frac{x}{100}\right)\% = \frac{1475}{21}\% = 70\% \text{ (approximately).}$$

5. A vendor bought toffees at 6 for a rupee. How many for a rupee must he sell to gain 20%?
   A.3   B.4
   C.5   D.6
   Answer & Explanation

   Answer: Option **C**

   Explanation:

   C.P. of 6 toffees = Re. 1

   S.P. of 6 toffees = 120% of Re. 1 = Rs. $\frac{6}{5}$

   For Rs. $\frac{6}{5}$, toffees sold = 6.

   For Re. 1, toffees sold = $\left(6 \times \frac{5}{6}\right) = 5$.

6. The percentage profit earned by selling an article for Rs. 1920 is equal to the percentage loss incurred by selling the same article for Rs. 1280. At what price should the article be sold to make 25% profit?
   A.Rs. 2000   B.Rs. 2200
   C.Rs. 2400   D.Data inadequate
   Answer & Explanation

   Answer: Option **A**

   Explanation:

   Let C.P. be Rs. x.

Then, $\frac{1920 - x}{x}\times 100 = \frac{x - 1280}{x}\times 100$

$\Rightarrow 1920 - x = x - 1280$

$\Rightarrow 2x = 3200$

$\Rightarrow x = 1600$

$\therefore$ Required S.P. = 125% of Rs. 1600 = Rs. $\left(\frac{125}{100}\times\frac{x}{1600}\right)$ = Rs 2000.

7. A shopkeeper expects a gain of 22.5% on his cost price. If in a week, his sale was of Rs. 392, what was his profit?
   A.Rs. 18.20   B.Rs. 70
   C.Rs. 72   D.Rs. 88.25
   Answer & Explanation

   Answer: Option **C**

   Explanation:

   C.P. = Rs. $\left(\frac{100}{122.5}\times\frac{x}{392}\right)$ = Rs. $\left(\frac{1000}{1225}\times\frac{x}{392}\right)$ = Rs. 320

   $\therefore$ Profit = Rs. (392 - 320) = Rs. 72.

8. A man buys a cycle for Rs. 1400 and sells it at a loss of 15%. What is the selling price of the cycle?
   A.Rs. 1090   B.Rs. 1160
   C.Rs. 1190   D.Rs. 1202
   Answer & Explanation

   Answer: Option **C**

   Explanation:

   S.P. = 85% of Rs. 1400 = Rs. $\left(\frac{85}{100}\times\frac{x}{1400}\right)$ = Rs. 1190

9. Sam purchased 20 dozens of toys at the rate of Rs. 375 per dozen. He sold each one of them at the rate of Rs. 33. What was his percentage profit?
   A.3.5   B.4.5
   C.5.6   D.6.5
   Answer & Explanation

Answer: Option **C**

Explanation:

Cost Price of 1 toy = Rs. $\left(\dfrac{375}{12}\right)$ = Rs. 31.25

Selling Price of 1 toy = Rs. 33

So, Gain = Rs. (33 - 31.25) = Rs. 1.75

$\therefore$ Profit % = $\left(\dfrac{1.75}{31.25}\text{x } 100\right)_{\%}$ = $\dfrac{28}{5}$ % = 5.6%

10. Some articles were bought at 6 articles for Rs. 5 and sold at 5 articles for Rs. 6. Gain percent is:

    A.30% B.$33\dfrac{1}{3}$%

    C.35% D.44%

    Answer & Explanation

    Answer: Option **D**

    Explanation:

    Suppose, number of articles bought = L.C.M. of 6 and 5 = 30.

    C.P. of 30 articles = Rs. $\left(\dfrac{5}{6}\text{x } 30\right)$ = Rs. 25.

    S.P. of 30 articles = Rs. $\left(\dfrac{6}{5}\text{x } 30\right)$ = Rs. 36.

    $\therefore$ Gain % = $\left(\dfrac{11}{25}\text{x } 100\right)_{\%}$ = 44%.

11. On selling 17 balls at Rs. 720, there is a loss equal to the cost price of 5 balls. The cost price of a ball is:

    A.Rs. 45 B.Rs. 50
    C.Rs. 55 D.Rs. 60
    Answer & Explanation

    Answer: Option **D**

    Explanation:

    (C.P. of 17 balls) - (S.P. of 17 balls) = (C.P. of 5 balls)

    $\Rightarrow$C.P. of 12 balls = S.P. of 17 balls = Rs.720.

    $\Rightarrow$C.P. of 1 ball = Rs. $\left(\dfrac{720}{12}\right)$ = Rs. 60.

12. When a plot is sold for Rs. 18,700, the owner loses 15%. At what price must that plot be sold in order to gain 15%?
    A.Rs. 21,000 B.Rs. 22,500
    C.Rs. 25,300 D.Rs. 25,800
    Answer & Explanation

    Answer: Option **C**

    Explanation:

    85 : 18700 = 115 : x

    $\Rightarrow x = \left(\dfrac{18700 \text{ x } 115}{85}\right)$ = 25300.

    Hence, S.P. = Rs. 25,300

13. 100 oranges are bought at the rate of Rs. 350 and sold at the rate of Rs. 48 per dozen. The percentage of profit or loss is:

    A.$14\dfrac{2}{7}$% gain B.15% gain

    C.$14\dfrac{2}{7}$% loss D.15 % loss

    Answer & Explanation

    Answer: Option **A**

    Explanation:

    C.P. of 1 orange = Rs. $\left(\dfrac{350}{100}\right)$ = Rs. 3.50

    S.P. of 1 orange = Rs. $\left(\dfrac{48}{12}\right)$ = Rs. 4

    $\therefore$ Gain% = $\left(\dfrac{0.50}{3.50}\text{x } 100\right)_{\%}$ = $\dfrac{100}{7}$ % = $14\dfrac{2}{7}$%

14. A shopkeeper sells one transistor for Rs. 840 at a gain of 20% and another for Rs. 960 at a loss of 4%. His total gain or loss percent is:

A.$5\frac{15}{17}$% loss   B.$5\frac{15}{17}$% gain

C.$6\frac{2}{3}$% gain   D.None of these

Answer & Explanation

Answer: Option **B**

Explanation:

C.P. of 1st transistor = Rs. $\left(\frac{100}{120} \times 840\right)$ = Rs. 700.

C.P. of 2nd transistor = Rs. $\left(\frac{100}{96} \times 960\right)$ = Rs. 1000

So, total C.P. = Rs. (700 + 1000) = Rs. 1700.

Total S.P. = Rs. (840 + 960) = Rs. 1800.

$\therefore$ Gain % = $\left(\frac{100}{1700} \times 100\right)\%$ = $5\frac{15}{17}$%

15. A trader mixes 26 kg of rice at Rs. 20 per kg with 30 kg of rice of other variety at Rs. 36 per kg and sells the mixture at Rs. 30 per kg. His profit percent is:
A.No profit, no loss   B.5%
C.8%   D.10%
E.None of these
Answer & Explanation

Answer: Option **B**

Explanation:

C.P. of 56 kg rice = Rs. (26 x 20 + 30 x 36)
= Rs. (520 + 1080) = Rs. 1600.

S.P. of 56 kg rice = Rs. (56 x 30) = Rs. 1680.

$\therefore$ Gain = $\left(\frac{80}{1600} \times 100\right)\%$ = 5%.

4.Problems on Ages

1. Father is aged three times more than his son Ronit. After 8 years, he would be two and a half times of Ronit's age. After further 8 years, how many times would he be of Ronit's age?

A.2 times   B.$2\frac{1}{2}$ times

C.$2\frac{3}{4}$ times   D.3 times

Answer & Explanation

Answer: Option **A**

Explanation:

Let Ronit's present age be x years. Then,
father's present age = $(x + 3x)$ years = $4x$ years.

$\therefore (4x + 8) = \frac{5}{2}(x + 8)$

$\Rightarrow 8x + 16 = 5x + 40$

$\Rightarrow 3x = 24$

$\Rightarrow x = 8.$

Hence, required ratio = $\frac{(4x + 16)}{(x + 16)} = \frac{48}{24}$ = 2.

2. The sum of ages of 5 children born at the intervals of 3 years each is 50 years. What is the age of the youngest child?
A.4 years   B.8 years
C.10 years   D.None of these
Answer & Explanation

Answer: Option **A**

Explanation:

Let the ages of children be x, $(x + 3)$, $(x + 6)$, $(x + 9)$ and $(x + 12)$ years.

Then, $x + (x + 3) + (x + 6) + (x + 9) + (x + 12)$ = 50

$\Rightarrow 5x = 20$

$\Rightarrow x = 4.$

$\therefore$ Age of the youngest child $= x = 4$ years.

3. A father said to his son, "I was as old as you are at the present at the time of your birth". If the father's age is 38 years now, the son's age five years back was:
A. 14 years   B. 19 years
C. 33 years   D. 38 years
Answer & Explanation

Answer: Option **A**

Explanation:

Let the son's present age be x years. Then, $(38 - x) = x$

$\Rightarrow 2x = 38.$

$\Rightarrow x = 19.$

$\therefore$ Son's age 5 years back $(19 - 5) = 14$ years.

4. A is two years older than B who is twice as old as C. If the total of the ages of A, B and C be 27, the how old is B?
A. 7   B. 8
C. 9   D. 10
E. 11
Answer & Explanation

Answer: Option **D**

Explanation:

Let C's age be x years. Then, B's age $= 2x$ years. A's age $= (2x + 2)$ years.

$\therefore (2x + 2) + 2x + x = 27$

$\Rightarrow 5x = 25$

$\Rightarrow x = 5.$

Hence, B's age $= 2x = 10$ years.

5. Present ages of Sameer and Anand are in the ratio of 5 : 4 respectively. Three years hence, the ratio of their ages will become 11 : 9 respectively. What is Anand's present age in years?
A. 24   B. 27
C. 40   D. Cannot be determined
E. None of these
Answer & Explanation

Answer: Option **A**

Explanation:

Let the present ages of Sameer and Anand be $5x$ years and $4x$ years respectively.

Then, $\dfrac{5x + 3}{4x + 3} = \dfrac{11}{9}$

$\Rightarrow 9(5x + 3) = 11(4x + 3)$

$\Rightarrow 45x + 27 = 44x + 33$

$\Rightarrow 45x - 44x = 33 - 27$

$\Rightarrow x = 6.$

$\therefore$ Anand's present age $= 4x = 24$ years.

6. A man is 24 years older than his son. In two years, his age will be twice the age of his son. The present age of his son is:
A. 14 years   B. 18 years
C. 20 years   D. 22 years
Answer & Explanation

Answer: Option **D**

Explanation:

Let the son's present age be x years. Then, man's present age $= (x + 24)$ years.

$\therefore (x + 24) + 2 = 2(x + 2)$

$\Rightarrow x + 26 = 2x + 4$

$\Rightarrow x = 22.$

7. Six years ago, the ratio of the ages of Kunal and Sagar was 6 : 5. Four years hence, the ratio of their ages will be 11 : 10. What is Sagar's age at present?
A. 16 years   B. 18 years
C. 20 years   D. Cannot be determined
E. None of these
Answer & Explanation

Answer: Option **A**

Explanation:

Let the ages of Kunal and Sagar 6 years ago be $6x$ and $5x$ years respectively.

Then, $\dfrac{(6x + 6) + 4}{(5x + 6) + 4} = \dfrac{11}{10}$

$\Rightarrow 10(6x + 10) = 11(5x + 10)$

$\Rightarrow 5x = 10$

$\Rightarrow x = 2.$

$\therefore$ Sagar's present age $= (5x + 6) = 16$ years.

8. The sum of the present ages of a father and his son is 60 years. Six years ago, father's age was five times the age of the son. After 6 years, son's age will be:
A. 12 years   B. 14 years
C. 18 years   D. 20 years
Answer & Explanation

Answer: Option **D**

Explanation:

Let the present ages of son and father be x and $(60 - x)$ years respectively.

Then, $(60 - x) - 6 = 5(x - 6)$

$\Rightarrow 54 - x = 5x - 30$

$\Rightarrow 6x = 84$

$\Rightarrow x = 14.$

$\therefore$ Son's age after 6 years $= (x + 6) = 20$ years..

9. At present, the ratio between the ages of Arun and Deepak is 4 : 3. After 6 years, Arun's age will be 26 years. What is the age of Deepak at present ?
A. 12 years   B. 15 years
C. 19 and half   D. 21 years
Answer & Explanation

Answer: Option **B**

Explanation:

Let the present ages of Arun and Deepak be $4x$ years and $3x$ years respectively. Then,

$4x + 6 = 26 \iff 4x = 20$

$x = 5.$

$\therefore$ Deepak's age $= 3x = 15$ years.

10. Sachin is younger than Rahul by 7 years. If their ages are in the respective ratio of 7 : 9, how old is Sachin?
A. 16 years   B. 18 years
C. 28 years   D. 24.5 years
E. None of these
Answer & Explanation

Answer: Option **D**

Explanation:

Let Rahul's age be x years.

Then, Sachin's age $= (x - 7)$ years.

$\therefore \dfrac{x - 7}{x} = \dfrac{7}{9}$

$\Rightarrow 9x - 63 = 7x$

$\Rightarrow 2x = 63$

$\Rightarrow x = 31.5$

Hence, Sachin's age $= (x - 7) = 24.5$ years.

11. The present ages of three persons in proportions 4 : 7 : 9. Eight years ago, the sum of their ages was 56. Find their present ages (in years).
A. 8, 20, 28   B. 16, 28, 36
C. 20, 35, 45   D. None of these
Answer & Explanation

Answer: Option **B**

Explanation:

Let their present ages be $4x$, $7x$ and $9x$ years respectively.

Then, $(4x - 8) + (7x - 8) + (9x - 8) = 56$

$\Rightarrow 20x = 80$

$\Rightarrow x = 4.$

∴ Their present ages are $4x = 16$ years, $7x = 28$ years and $9x = 36$ years respectively.

12. Ayesha's father was 38 years of age when she was born while her mother was 36 years old when her brother four years younger to her was born. What is the difference between the ages of her parents?
A. 2 years   B. 4 years
C. 6 years   D. 8 years
Answer & Explanation

Answer: Option **C**

Explanation:

Mother's age when Ayesha's brother was born = 36 years.

Father's age when Ayesha's brother was born

= (38 + 4) years = 42 years.

∴ Required difference = (42 - 36) years = 6 years.

13. A person's present age is two-fifth of the age of his mother. After 8 years, he will be one-half of the age of his mother. How old is the mother at present?
A. 32 years   B. 36 years
C. 40 years   D. 48 years
Answer & Explanation

Answer: Option **C**

Explanation:

Let the mother's present age be x years.

Then, the person's present age $= \left(\dfrac{2}{5}x\right)$ years.

∴ $\left(\dfrac{2}{5}x + 8\right) = \dfrac{1}{2}(x + 8)$

$\Rightarrow 2(2x + 40) = 5(x + 8)$

$\Rightarrow x = 40.$

14. Q is as much younger than R as he is older than T. If the sum of the ages of R and T is 50 years, what is definitely the difference between R and Q's age?
A. 1 year   B. 2 years
C. 25 years   D. Data inadequate
E. None of these
Answer & Explanation

Answer: Option **D**

Explanation:

Given that:

1. The difference of age b/w R and Q = The difference of age b/w Q and T.

2. Sum of age of R and T is 50 i.e. (R + T) = 50.

Question: R - Q = ?.

Explanation:

R - Q = Q - T

(R + T) = 2Q

Now given that, (R + T) = 50

So, 50 = 2Q and therefore Q = 25.

Question is (R - Q) = ?

Here we know the value(age) of Q (25), but we don't know the age of R.

Therefore, (R-Q) cannot be determined.

15. The age of father 10 years ago was thrice the age of his son. Ten years hence, father's age will be twice that of his son. The ratio of their present ages is:
A.5 : 2　　　　　　　B.7 : 3
C.9 : 2　　　　　　　D.13 : 4
Answer & Explanation

Answer: Option **B**

Explanation:

Let the ages of father and son 10 years ago be $3x$ and x years respectively.

Then, $(3x + 10) + 10 = 2[(x + 10) + 10]$

$\Rightarrow 3x + 20 = 2x + 40$

$\Rightarrow x = 20.$

A.$28\frac{4}{7}$years　　　　B.$31\frac{5}{7}$years

C.$32\frac{1}{7}$years　　　　D.None of these
Answer & Explanation

Answer: Option **B**

Explanation:

∴ Required ratio = $(3x + 10) : (x + 10) = 70 : 30 = 7 : 3$.

5.Average

1. In the first 10 overs of a cricket game, the run rate was only 3.2. What should be the run rate in the remaining 40 overs to reach the target of 282 runs?
A.6.25　　　　　　　B.6.5
C.6.75　　　　　　　D.7
Answer & Explanation

Answer: Option **A**

Explanation:

$$\text{Required run rate} = \left(\frac{282 - (3.2 \times 10)}{40}\right) = \frac{250}{40} = 6.25$$

2. A family consists of two grandparents, two parents and three grandchildren. The average age of the grandparents is 67 years, that of the parents is 35 years and that of the grandchildren is 6 years. What is the average age of the family?

$$\text{Required average} = \left(\frac{67 \times 2 + 35 \times 2 + 6 \times 3}{2 + 2 + 3}\right)$$
$$= \left(\frac{134 + 70 + 18}{7}\right)$$
$$= \frac{222}{7}$$
$$= 31\frac{5}{7}\text{years}.$$

3. A grocer has a sale of Rs. 6435, Rs. 6927, Rs. 6855, Rs. 7230 and Rs. 6562 for 5

A. Rs. 4991   B. Rs. 5991
C. Rs. 6001   D. Rs. 6991

Answer & Explanation

Answer: Option **A**

Explanation:

Total sale for 5 months = Rs. (6435 + 6927 + 6855 + 7230 + 6562) = Rs. 34009.

∵ Required sale = Rs. [(6500 x 6) - 34009]

 = Rs. (39000 - 34009)

 = Rs. 4991.

4. The average of 20 numbers is zero. Of them, at the most, how many may be greater than zero?

A. 0   B. 1
C. 10   D. 19

Answer & Explanation

Answer: Option **D**

Explanation:

Average of 20 numbers = 0.

∵ Sum of 20 numbers (0 x 20) = 0.

It is quite possible that 19 of these numbers may be positive and if their sum is a then 20th number is ($-a$).

5. The average weight of 8 person's increases by 2.5 kg when a new person comes in place of one of them weighing 65 kg. What might be the weight of the new person?

A. 76 kg   B. 76.5 kg
C. 85 kg   D. Data inadequate
E. None of these

Answer & Explanation

Answer: Option **C**

consecutive months. How much sale must he have in the sixth month so that he gets an average sale of Rs. 6500?

Explanation:

Total weight increased = (8 x 2.5) kg = 20 kg.

Weight of new person = (65 + 20) kg = 85 kg.

6. The captain of a cricket team of 11 members is 26 years old and the wicket keeper is 3 years older. If the ages of these two are excluded, the average age of the remaining players is one year less than the average age of the whole team. What is the average age of the team?

A. 23 years   B. 24 years
C. 25 years   D. None of these

Answer & Explanation

Answer: Option **A**

Explanation:

Let the average age of the whole team by x years.

∵ $11x - (26 + 29) = 9(x - 1)$

$\Rightarrow 11x - 9x = 46$

$\Rightarrow 2x = 46$

$\Rightarrow x = 23.$

So, average age of the team is 23 years.

7. The average monthly income of P and Q is Rs. 5050. The average monthly income of Q and R is Rs. 6250 and the average monthly income of P and R is Rs. 5200. The monthly income of P is:

A. 3500   B. 4000
C. 4050   D. 5000

Answer & Explanation

Answer: Option **B**

Explanation:

Let P, Q and R represent their respective monthly incomes. Then, we have:

P + Q = (5050 x 2) = 10100 .... (i)

Q + R = (6250 x 2) = 12500 .... (ii)

P + R = (5200 x 2) = 10400 .... (iii)

Adding (i), (ii) and (iii), we get: 2(P + Q + R) = 33000
or   P + Q + R = 16500 .... (iv)

Subtracting (ii) from (iv), we get P = 4000.

∴ P's monthly income = Rs. 4000.

---

8. The average age of husband, wife and their child 3 years ago was 27 years and that of wife and the child 5 years ago was 20 years. The present age of the husband is:
   A. 35 years   B. 40 years
   C. 50 years   D. None of these
   Answer & Explanation

   Answer: Option **B**

   Explanation:

   Sum of the present ages of husband, wife and child = (27 x 3 + 3 x 3) years = 90 years.

   Sum of the present ages of wife and child = (20 x 2 + 5 x 2) years = 50 years.

   Husband's present age = (90 - 50) years = 40 years.

9. A car owner buys petrol at Rs.7.50, Rs. 8 and Rs. 8.50 per litre for three successive years. What approximately is the average cost per litre of petrol if he spends Rs. 4000 each year?
   A. Rs. 7.98   B. Rs. 8
   C. Rs. 8.50   D. Rs. 9
   Answer & Explanation

   Answer: Option **A**

   Explanation:

   Total quantity of petrol consumed in 3 years $= \left(\dfrac{400}{7.50} + \dfrac{400}{8} + \dfrac{400}{8.50} \right)$ litres

   $= 4000 \left(\dfrac{2}{15} + \dfrac{1}{8} + \dfrac{2}{17} \right)$ litres

   $= \left(\dfrac{76700}{51} \right)$ litres

Total amount spent = Rs. (3 x 4000) = Rs. 12000.

∴ Average cost = Rs. $\left(\dfrac{12000 \times 51}{76700} \right)$ = Rs. $\dfrac{6120}{767}$ = Rs. 7.98

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10. In Arun's opinion, his weight is greater than 65 kg but less than 72 kg. His brother doest not agree with Arun and he thinks that Arun's weight is greater than 60 kg but less than 70 kg. His mother's view is that his weight cannot be greater than 68 kg. If all are them are correct in their estimation, what is the average of different probable weights of Arun?
    A. 67 kg.   B. 68 kg.
    C. 69 kg.   D. Data inadequate
    E. None of these
    Answer & Explanation

    Answer: Option **A**

    Explanation:

    Let Arun's weight by X kg.

    According to Arun, 65 < X < 72

    According to Arun's brother, 60 < X < 70.

    According to Arun's mother, X <= 68

    The values satisfying all the above conditions are 66, 67 and 68.

    ∴ Required average = $\left(\dfrac{66 + 67 + 68}{3} \right) = \left(\dfrac{201}{3} \right)$ = 67 kg.

11. The average weight of A, B and C is 45 kg. If the average weight of A and B be 40 kg and that of B and C be 43 kg, then the weight of B is:
    A. 17 kg   B. 20 kg
    C. 26 kg   D. 31 kg
    Answer & Explanation

    Answer: Option **D**

    Explanation:

    Let A, B, C represent their respective weights. Then, we have:

    A + B + C = (45 x 3) = 135 .... (i)

    A + B = (40 x 2) = 80 .... (ii)

B + C = (43 x 2) = 86 ....(iii)

Adding (ii) and (iii), we get: A + 2B + C = 166 .... (iv)

Subtracting (i) from (iv), we get : B = 31.

∴ B's weight = 31 kg.

---

12. The average weight of 16 boys in a class is 50.25 kg and that of the remaining 8 boys is 45.15 kg. Find the average weights of all the boys in the class.
A. 47.55 kg   B. 48 kg
C. 48.55 kg   D. 49.25 kg
Answer & Explanation

Answer: Option **C**

Explanation:

$$\text{Required average} = \left(\frac{50.25 \times 16 + 45.15 \times 8}{16 + 8} \right)$$
$$= \left(\frac{804 + 361.20}{24} \right)$$
$$= \frac{1165.20}{24}$$
$$= 48.55$$

---

13. A library has an average of 510 visitors on Sundays and 240 on other days. The average number of visitors per day in a month of 30 days beginning with a Sunday is:
A. 250   B. 276
C. 280   D. 285
Answer & Explanation

Answer: Option **D**

Explanation:

Since the month begins with a Sunday, to there will be five Sundays in the month.

$$\text{Required average} = \left(\frac{510 \times 5 + 240 \times 25}{30} \right)$$
$$= \frac{8550}{30}$$
$$= 285$$

---

14. If the average marks of three batches of 55, 60 and 45 students respectively is 50, 55, 60, then the average marks of all the students is:
A. 53.33   B. 54.68
C. 55   D. None of these
Answer & Explanation

Answer: Option **B**

Explanation:

$$\text{Required average} = \left(\frac{55 \times 50 + 60 \times 55 + 45 \times 60}{55 + 60 + 45} \right)$$
$$= \left(\frac{2750 + 3300 + 2700}{160} \right)$$
$$= \frac{8750}{160}$$
$$= 54.68$$

---

15. A pupil's marks were wrongly entered as 83 instead of 63. Due to that the average marks for the class got increased by half (1/2). The number of pupils in the class is:
A. 10   B. 20
C. 40   D. 73
Answer & Explanation

Answer: Option **C**

Explanation:

Let there be x pupils in the class.

$$\text{Total increase in marks} = \left(x \times \frac{1}{2} \right) = \frac{x}{2}$$

∴ $\frac{x}{2} = (83 - 63) \Rightarrow \frac{x}{2} = 20 \Rightarrow x = 40.$

6. Permutation and Combination

1. From a group of 7 men and 6 women, five persons are to be selected to form a committee so that at least 3 men are there on the committee. In how many ways can it be done?
A. 564   B. 645
C. 735   D. 756
E. None of these
Answer & Explanation

Answer: Option **D**

Explanation:

We may have (3 men and 2 women) or (4 men and 1 woman) or (5 men only).

∴ Required number of ways $= (^7C_3 \times {}^6C_2) + (^7C_4 \times {}^6C_1) + (^7C_5)$

$$= \left(\frac{7 \times 6 \times 5}{5} \times \frac{6 \times 5}{5} \right) + (^7C_3 \times {}^6C_1) + (^7C_2)$$

$$
\begin{aligned}
&= 525 + \left(\frac{\overset{3}{7} \times \overset{2}{6} \times 5}{3 \times 2 \times 1} \times \overset{2}{6}\right) + \left(\frac{\overset{1}{7} \times \overset{1}{6}}{2 \times 1}\right) \\
&= (525 + 210 + 21) \\
&= 756.
\end{aligned}
$$

2. In how many different ways can the letters of the word 'LEADING' be arranged in such a way that the vowels always come together?
   A. 360   B. 480
   C. 720   D. 5040
   E. None of these
   Answer & Explanation

   Answer: Option **C**

   Explanation:

   The word 'LEADING' has 7 different letters.

   When the vowels EAI are always together, they can be supposed to form one letter.

   Then, we have to arrange the letters LNDG (EAI).

   Now, 5 (4 + 1 = 5) letters can be arranged in 5! = 120 ways.

   The vowels (EAI) can be arranged among themselves in 3! = 6 ways.

   ∴ Required number of ways = (120 x 6) = 720.

3. In how many different ways can the letters of the word 'CORPORATION' be arranged so that the vowels always come together?
   A. 810   B. 1440
   C. 2880   D. 50400
   E. 5760
   Answer & Explanation

   Answer: Option **D**

   Explanation:

   In the word 'CORPORATION', we treat the vowels OOAIO as one letter.

   Thus, we have CRPRTN (OOAIO).

   This has 7 (6 + 1) letters of which R occurs 2 times and the rest are different.

   Number of ways arranging these letters $= \dfrac{7!}{2!} = 2520$.

Now, 5 vowels in which O occurs 3 times and the rest are different, can be arranged

in $\dfrac{5!}{3!} = 20$ ways.

∴ Required number of ways = (2520 x 20) = 50400.

4. Out of 7 consonants and 4 vowels, how many words of 3 consonants and 2 vowels can be formed?
   A. 210   B. 1050
   C. 25200   D. 21400
   E. None of these
   Answer & Explanation

   Answer: Option **C**

   Explanation:

   Number of ways of selecting (3 consonants out of 7) and (2 vowels out of 4)

   $$
   \begin{aligned}
   &= (^{7}C_3 \times {}^{4}C_2) \\
   &= \left(\frac{7 \times 6 \times 5}{3 \times 2 \times 1} \times \frac{4 \times 3}{2 \times 1}\right) \\
   &= 210.
   \end{aligned}
   $$

   Number of groups, each having 3 consonants and 2 vowels = 210.

   Each group contains 5 letters.

   Number of ways of arranging 5 letters among themselves $= 5!$
   $$= 5 \times 4 \times 3 \times 2 \times 1$$
   $$= 120.$$

   ∴ Required number of ways = (210 x 120) = 25200.

5. In how many ways can the letters of the word 'LEADER' be arranged?
   A. 72   B. 144
   C. 360   D. 720
   E. None of these
   Answer & Explanation

   Answer: Option **C**

   Explanation:

   The word 'LEADER' contains 6 letters, namely 1L, 2E, 1A, 1D and 1R.

   ∴ Required number of ways $= \dfrac{6!}{(1!)(2!)(1!)(1!)(1!)} = 360.$

6. In a group of 6 boys and 4 girls, four children are to be selected. In how many different ways can they be selected such that at least one boy should be there?

A.159   B.194
C.205   D.209
E.None of these
Answer & Explanation

Answer: Option **D**

Explanation:

We may have (1 boy and 3 girls) or (2 boys and 2 girls) or (3 boys and 1 girl) or (4 boys).

∴ Required number of ways

$= ({}^6C_1 \times {}^4C_3) + ({}^6C_2 \times {}^4C_2) + ({}^6C_3 \times {}^4C_1) + ({}^6C_4)$

$= ({}^6C_1 \times {}^4C_1) + ({}^6C_2 \times {}^4C_2) + ({}^6C_3 \times {}^4C_1) + ({}^6C_2)$

$= (6 \times 4) + \left(\dfrac{6 \times 4}{2 \times 2} \times \dfrac{5 \times 3}{1 \times 1}\right) + \left(\dfrac{6 \times 5 \times 4}{3 \times 2 \times 1} \times 4\right) + \left(\dfrac{6 \times 5}{2 \times 1}\right)$

$= (24 + 90 + 80 + 15)$

$= 209.$

---

7. How many 3-digit numbers can be formed from the digits 2, 3, 5, 6, 7 and 9, which are divisible by 5 and none of the digits is repeated?

A.5   B.10
C.15   D.20
Answer & Explanation

Answer: Option **D**

Explanation:

Since each desired number is divisible by 5, so we must have 5 at the unit place. So, there is 1 way of doing it.

The tens place can now be filled by any of the remaining 5 digits (2, 3, 6, 7, 9). So, there are 5 ways of filling the tens place.

The hundreds place can now be filled by any of the remaining 4 digits. So, there are 4 ways of filling it.

∴ Required number of numbers = (1 x 5 x 4) = 20.

---

8. In how many ways a committee, consisting of 5 men and 6 women can be formed from 8 men and 10 women?

A.266   B.5040
C.11760   D.86400
E.None of these
Answer & Explanation

Answer: Option **C**

Explanation:

Required number of ways= $({}^8C_5 \times {}^{10}C_6)$
$= ({}^8C_3 \times {}^{10}C_4)$
$= \left(\dfrac{8 \times 7 \times 6}{3 \times 2 \times 1} \times \dfrac{10 \times 9 \times 8 \times 7}{4 \times 3 \times 2 \times 1}\right)$
$= 11760.$

---

9. A box contains 2 white balls, 3 black balls and 4 red balls. In how many ways can 3 balls be drawn from the box, if at least one black ball is to be included in the draw?

A.32   B.48
C.64   D.96
E.None of these
Answer & Explanation

Answer: Option **C**

Explanation:

We may have(1 black and 2 non-black) or (2 black and 1 non-black) or (3 black).

∴ Required number of ways

$= ({}^3C_1 \times {}^6C_2) + ({}^3C_2 \times {}^6C_1) + ({}^3C_3)$
$= \left(3 \times \dfrac{6 \times 5}{2 \times 1}\right) + \left(\dfrac{3 \times 2}{2 \times 1} \times 6\right) + 1$
$= (45 + 18 + 1)$
$= 64.$

---

10. In how many different ways can the letters of the word 'DETAIL' be arranged in such a way that the vowels occupy only the odd positions?

A.32   B.48
C.36   D.60
E.120
Answer & Explanation

Answer: Option **C**

Explanation:

There are 6 letters in the given word, out of which there are 3 vowels and 3 consonants.

Let us mark these positions as under:

(1) (2) (3) (4) (5) (6)

Now, 3 vowels can be placed at any of the three places

out 4, marked 1, 3, 5.

Number of ways of arranging the vowels = $^3P_3 = 3! = 6$.

Also, the 3 consonants can be arranged at the remaining 3 positions.

Number of ways of these arrangements = $^3P_3 = 3! = 6$.

Total number of ways = (6 x 6) = 36.

11. In how many ways can a group of 5 men and 2 women be made out of a total of 7 men and 3 women?
A.63   B.90

C.126   D.45

E.135

Answer & Explanation

Answer: Option **A**

Explanation:

Required number of ways = $(^7C_5 \times ^3C_2) = (^7C_2 \times ^3C_1) = \begin{pmatrix} 7 \times 6 \\ 2 \times 1 \end{pmatrix} \times \begin{pmatrix} 3 \\ 1 \end{pmatrix} = 63$.

---

12. How many 4-letter words with or without meaning, can be formed out of the letters of the word, 'LOGARITHMS', if repetition of letters is not allowed?
A.40   B.400

C.5040   D.2520

Answer & Explanation

Answer: Option **C**

Explanation:

'LOGARITHMS' contains 10 different letters.

Required number of words = Number of arrangements of 10 letters, taking 4 at a time.

$= ^{10}P_4$

$= (10 \times 9 \times 8 \times 7)$

$= 5040.$

13. In how many different ways can the letters of the word 'MATHEMATICS' be arranged so that the vowels always come together?
A.10080   B.4989600

C.120960   D.None of these

Answer & Explanation

Answer: Option **C**

Explanation:

In the word 'MATHEMATICS', we treat the vowels AEAI as one letter.

Thus, we have MTHMTCS (AEAI).

Now, we have to arrange 8 letters, out of which M occurs twice, T occurs twice and the rest are different.

∴ Number of ways of arranging these letters = $\dfrac{8!}{(2!)(2!)}$ = 10080.

Now, AEAI has 4 letters in which A occurs 2 times and the rest are different.

Number of ways of arranging these letters = $\dfrac{4!}{2!}$ = 12.

∴ Required number of words = (10080 x 12) = 120960.

---

14. In how many different ways can the letters of the word 'OPTICAL' be arranged so that the vowels always come together?
A.120   B.720

C.4320   D.2160

E.None of these

Answer & Explanation

Answer: Option **B**

Explanation:

The word 'OPTICAL' contains 7 different letters.

When the vowels OIA are always together, they can be

supposed to form one letter.

Then, we have to arrange the letters PTCL (OIA).

Now, 5 letters can be arranged in 5! = 120 ways.

The vowels (OIA) can be arranged among themselves in 3! = 6 ways.

∴ Required number of ways = (120 x 6) = 72

7.Problems on H.C.F and L.C.M

1. Find the greatest number that will divide 43, 91 and 183 so as to leave the same remainder in each case.

A.4   B.7

C.9   D.13

Answer & Explanation

Answer: Option **A**

Explanation:

Required number = H.C.F. of (91 - 43), (183 - 91) and (183 - 43)

  = H.C.F. of 48, 92 and 140 = 4.

2. The H.C.F. of two numbers is 23 and the other two factors of their L.C.M. are 13 and 14. The larger of the two numbers is:

A.276   B.299

C.322   D.345

Answer & Explanation

Answer: Option **C**

Explanation:

Clearly, the numbers are (23 x 13) and (23 x 14).

∴ Larger number = (23 x 14) = 322.

3. Six bells commence tolling together and toll at intervals of 2, 4, 6, 8 10 and 12 seconds respectively. In 30 minutes, how many times do they toll together ?

A.4   B.10

C.15   D.16

Answer & Explanation

Answer: Option **D**

Explanation:

L.C.M. of 2, 4, 6, 8, 10, 12 is 120.

So, the bells will toll together after every 120 seconds(2 minutes).

In 30 minutes, they will toll together $\dfrac{30}{2} + 1 = 16$ times.

---

4. Let N be the greatest number that will divide 1305, 4665 and 6905, leaving the same remainder in each case. Then sum of the digits in N is:

A.4   B.5

C.6   D.8

Answer & Explanation

Answer: Option **A**

Explanation:

N = H.C.F. of (4665 - 1305), (6905 - 4665) and (6905 - 1305)

  = H.C.F. of 3360, 2240 and 5600 = 1120.

Sum of digits in N = (1 + 1 + 2 + 0) = 4

---

5. The greatest number of four digits which is divisible by 15, 25, 40 and 75 is:

A.9000   B.9400

C.9600   D.9800

Answer & Explanation

Answer: Option **C**

Explanation:

Greatest number of 4-digits is 9999.

L.C.M. of 15, 25, 40 and 75 is 600.

On dividing 9999 by 600, the remainder is 399.

∵ Required number (9999 - 399) = 9600.

6. The product of two numbers is 4107. If the H.C.F. of these numbers is 37, then the greater number is:

A.101   B.107

C.111   D.185

Answer & Explanation

Answer: Option **C**

Explanation:

Let the numbers be $37a$ and $37b$.

Then, $37a$ x $37b = 4107$

$\Rightarrow ab = 3$.

Now, co-primes with product 3 are (1, 3).

So, the required numbers are (37 x 1, 37 x 3) *i.e.,* (37, 111).

∵ Greater number = 111.

7. Three number are in the ratio of 3 : 4 : 5 and their L.C.M. is 2400. Their H.C.F. is:

A.40   B.80

C.120   D.200

Answer & Explanation

Answer: Option **A**

Explanation:

Let the numbers be $3x$, $4x$ and $5x$.

Then, their L.C.M. = $60x$.

So, $60x = 2400$ or x = 40.

∵ The numbers are (3 x 40), (4 x 40) and (5 x 40).

Hence, required H.C.F. = 40.

8. The G.C.D. of 1.08, 0.36 and 0.9 is:

A.0.03   B.0.9

C.0.18   D.0.108

Answer & Explanation

Answer: Option **C**

Explanation:

Given numbers are 1.08, 0.36 and 0.90.   H.C.F. of 108, 36 and 90 is 18,

∵ H.C.F. of given numbers = 0.18.

9. The product of two numbers is 2028 and their H.C.F. is 13. The number of such pairs is:

A.1   B.2

C.3   D.4

Answer & Explanation

Answer: Option **B**

Explanation:

Let the numbers $13a$ and $13b$.

Then, $13a$ x $13b = 2028$

$\Rightarrow ab = 12$.

Now, the co-primes with product 12 are (1, 12) and (3, 4).

[Note: Two integers a and b are said to be **coprime** or relatively prime if they have no common positive factor other than 1 or, equivalently, if their greatest common divisor is 1]

So, the required numbers are (13 x 1, 13 x 12) and (13 x 3, 13 x 4).

Clearly, there are 2 such pairs.

10. The least multiple of 7, which leaves a remainder of 4, when divided by 6, 9, 15 and 18 is:

A.74   B.94

C.184   D.364

Answer & Explanation

Answer: Option **D**

Explanation:

L.C.M. of 6, 9, 15 and 18 is 90.

Let required number be $90k + 4$, which is multiple of 7.

Least value of k for which $(90k + 4)$ is divisible by 7 is $k = 4$.

∴ Required number = $(90 \times 4) + 4 = 364$.

11. Find the lowest common multiple of 24, 36 and 40.

A. 120   B. 240

C. 360   D. 480

Answer & Explanation

Answer: Option **C**

Explanation:

```
2 | 24 - 36 - 40
--------------------
2 | 12 - 18 - 20
--------------------
2 | 6 -  9 - 10
-------------------
3 | 3 -  9 - 5
-------------------
  | 1 -  3 - 5
```

L.C.M. = $2 \times 2 \times 2 \times 3 \times 3 \times 5 = 360$.

12. The least number which should be added to 2497 so that the sum is exactly divisible by 5, 6, 4 and 3 is:

A. 3   B. 13

C. 23   D. 33

Answer & Explanation

Answer: Option **C**

Explanation:

L.C.M. of 5, 6, 4 and 3 = 60.

On dividing 2497 by 60, the remainder is 37.

∴ Number to be added = (60 - 37) = 23.

13.   128352 to its lowest terms.
    Reduce
            238368

A. $\dfrac{3}{4}$ B. $\dfrac{5}{13}$

C. $\dfrac{7}{13}$ D. $\dfrac{9}{13}$

Answer & Explanation

Answer: Option **C**

Explanation:

```
128352) 238368 ( 1
        128352
       ---------------
       110016 ) 128352 ( 1
                110016
                ------------------
                18336 ) 110016 ( 6
                        110016
                        -------
                           x
                        -------
```

So, H.C.F. of 128352 and 238368 = 18336.

$$\text{Therefore,} \quad \frac{128352}{238368} = \frac{128352 \div 18336}{238368 \div 18336} = \frac{7}{13}$$

14. The least number which when divided by 5, 6 , 7 and 8 leaves a remainder 3, but when divided by 9 leaves no remainder, is:

A. 1677   B. 1683

C. 2523   D. 3363

15. A, B and C start at the same time in the same direction to run around a circular stadium. A completes a round in 252 seconds, B in 308 seconds and c in 198 seconds, all starting at the same point. After what time will they again at the starting point ?

A. 26 minutes and 18 seconds

B. 42 minutes and 36 seconds

C. 45 minutes

D. 46 minutes and 12 seconds

Answer & Explanation

Answer: Option **D**

Explanation:

L.C.M. of 252, 308 and 198 = 2772.

So, A, B and C will again meet at the starting point in 2772 sec. *i.e.,* 46 min. 12 sec.

16. The H.C.F. of two numbers is 11 and their L.C.M. is 7700. If one of the numbers is 275, then the other is:

A. 279   B. 283

C. 308   D. 318

Answer & Explanation

Answer: Option **C**

Explanation:

Other number $= \left(\dfrac{11 \times 7700}{275} \right) = 308$.

---

17. What will be the least number which when doubled will be exactly divisible by 12, 18, 21 and 30 ?

A. 196   B. 630

C. 1260   D. 2520

Answer & Explanation

Answer: Option **B**

Explanation:

L.C.M. of 12, 18, 21 30

```
2 | 12 - 18 - 21 - 30
  ----------------------------
3 |  6 -  9 - 21 - 15
  ----------------------------
  |  2 -  3 -  7 -  5
```

= 2 x 3 x 2 x 3 x 7 x 5 = 1260.

Required number = (1260 ÷ 2)

= 630.

---

18. The ratio of two numbers is 3 : 4 and their H.C.F. is 4. Their L.C.M. is:

A. 12   B. 16

C. 24   D. 48

Answer & Explanation

Answer: Option **D**

Explanation:

Let the numbers be $3x$ and $4x$. Then, their H.C.F. $= x$. So, $x = 4$.

So, the numbers 12 and 16.

L.C.M. of 12 and 16 = 48.

---

19. The smallest number which when diminished by 7, is divisible 12, 16, 18, 21 and 28 is:

A. 1008   B. 1015

C. 1022   D. 1032

Answer & Explanation

Answer: Option **B**

Explanation:

Required number = (L.C.M. of 12,16, 18, 21, 28) + 7

= 1008 + 7

= 1015

20. 252 an be expressed as a product of primes as:

A. 2 x 2 x 3 x 3 x 7   B. 2 x 2 x 2 x 3 x 7

C. 3 x 3 x 3 x 3 x 7   D. 2 x 3 x 3 x 3 x 7

Answer & Explanation

Answer: Option **A**

Explanation:

Clearly, 252 = 2 x 2 x 3 x 3 x 7.

21. The greatest possible length which can be used to measure exactly the lengths 7 m, 3 m 85 cm, 12 m 95 cm is:

A. 15 cm   B. 25 cm

C. 35 cm   D. 42 cm

Answer & Explanation

Answer: Option **C**

Explanation:

Required length = H.C.F. of 700 cm, 385 cm and 1295 cm = 35 cm.

22. Three numbers which are co-prime to each other are such that the product of the first two is 551 and that of the last two is 1073. The sum of the three numbers is:

A.75   B.81

C.85   D.89

Answer & Explanation

Answer: Option **C**

Explanation:

Since the numbers are co-prime, they contain only 1 as the common factor.

Also, the given two products have the middle number in common.

So, middle number = H.C.F. of 551 and 1073 = 29;

First number $\left(\dfrac{551}{29}\right) = 19$;   Third number $\left(\dfrac{1073}{29}\right) = 37$.

∴ Required sum = (19 + 29 + 37) = 85.

23. Find the highest common factor of 36 and 84.

A.4   B.6

C.12   D.18

Answer & Explanation

Answer: Option **C**

Explanation:

$36 = 2^2 \times 3^2$

$84 = 2^2 \times 3 \times 7$

∴ H.C.F. $= 2^2 \times 3 = 12$.

24. Which of the following fraction is the largest ?

A. $\dfrac{7}{8}$ B. $\dfrac{13}{16}$

C.31   D.63

40   80

Answer & Explanation

Answer: Option **A**

Explanation:

L.C.M. of 8, 16, 40 and 80 = 80.

$\dfrac{7}{8} = \dfrac{70}{80}$; $\dfrac{13}{16} = \dfrac{65}{80}$; $\dfrac{31}{40} = \dfrac{62}{80}$

Since, $\dfrac{70}{80} > \dfrac{65}{80} > \dfrac{63}{80} > \dfrac{62}{80}$, so $\dfrac{7}{8} > \dfrac{13}{16} > \dfrac{63}{80} > \dfrac{31}{40}$

So, $\dfrac{7}{8}$ is the largest.

25. The least number, which when divided by 12, 15, 20 and 54 leaves in each case a remainder of 8 is:

A.504   B.536

C.544   D.548

Answer & Explanation

Answer: Option **D**

Explanation:

Required number = (L.C.M. of 12, 15, 20, 54) + 8

= 540 + 8

= 548.

26. The greatest number which on dividing 1657 and 2037 leaves remainders 6 and 5 respectively, is:

A.123   B.127

C.235   D.305

Answer & Explanation

Answer: Option **B**

Explanation:

Required number = H.C.F. of (1657 - 6) and (2037 - 5)

= H.C.F. of 1651 and 2032 = 127.

27. Which of the following has the most number of divisors?

A. 99   B. 101

C. 176   D. 182

Answer & Explanation

Answer: Option **C**

Explanation:

99 = 1 x 3 x 3 x 11

101 = 1 x 101

176 = 1 x 2 x 2 x 2 x 2 x 11

182 = 1 x 2 x 7 x 13

So, divisors of 99 are 1, 3, 9, 11, 33, .99

Divisors of 101 are 1 and 101

Divisors of 176 are 1, 2, 4, 8, 11, 16, 22, 44, 88 and 176

Divisors of 182 are 1, 2, 7, 13, 14, 26, 91 and 182.

Hence, 176 has the most number of divisors.

---

28. The L.C.M. of two numbers is 48. The numbers are in the ratio 2 : 3. Then sum of the number is:

A. 28   B. 32

C. 40   D. 64

Answer & Explanation

Answer: Option **C**

Explanation:

Let the numbers be $2x$ and $3x$.

Then, their L.C.M. = $6x$.

So, $6x = 48$ or $x = 8$.

∴ The numbers are 16 and 24.

Hence, required sum = $(16 + 24) = 40$.

29. The H.C.F. of 9 ,12,18and21is:

A. $\dfrac{3}{5}$ B. $\dfrac{252}{5}$

C. $\dfrac{3}{1400}$ D. $\dfrac{63}{700}$

Answer & Explanation

Answer: Option **C**

Explanation:

$$\text{Required H.C.F.} = \frac{\text{H.C.F. of 9, 12, 18, 21}}{\text{L.C.M. of 10, 25, 35, 40}} = \frac{3}{1400}$$

---

30. If the sum of two numbers is 55 and the H.C.F. and L.C.M. of these numbers are 5 and 120 respectively, then the sum of the reciprocals of the numbers is equal to:

A. $\dfrac{55}{601}$ B. $\dfrac{601}{55}$

C. $\dfrac{11}{120}$ D. $\dfrac{120}{11}$

Answer & Explanation

Answer: Option **C**

Explanation:

Let the numbers be a and b.

Then, $a + b = 55$ and $ab = 5$ x $120 = 600$.

$$\therefore \text{The required sum} = \frac{1}{a} + \frac{1}{b} = \frac{a + b}{ab} = \frac{55}{600} = \frac{11}{120}$$

8.Square Root and Cube Root

1. The cube root of .000216 is:

A. .6   B. .06

C. 77   D. 87

Answer & Explanation

Answer: Option **B**

Explanation:

$$(.000216)^{1/3} = \left(\frac{216}{10^6}\right)^{1/3}$$

$$= \left(\frac{6 \times 6 \times 6}{10^2 \times 10^2 \times 10^2}\right)^{1/3}$$

$$= \frac{6}{10^2}$$

$$= \frac{6}{100}$$

$$= 0.06$$

---

2. What should come in place of both x in the equation $\dfrac{x}{128} = \dfrac{162}{x}$.

A.12   B.14

C.144   D.196

Answer & Explanation

Answer: Option **A**

Explanation:

Let $\dfrac{x}{128} = \dfrac{162}{x}$

Then $x^2 = 128 \times 162$

$= 64 \times 2 \times 18 \times 9$

$= 8^2 \times 6^2 \times 3^2$

$= 8 \times 6 \times 3$

$= 144$.

$\therefore x = \sqrt{144} = 12$.

---

3. The least perfect square, which is divisible by each of 21,
36 and 66 is:

A.213444   B.214344

C.214434   D.231444

Answer & Explanation

Answer: Option **A**

Explanation:

L.C.M. of 21, 36, 66 = 2772.

Now, 2772 = 2 x 2 x 3 x 3 x 7 x 11

To make it a perfect square, it must be multiplied by 7 x 11.

So, required number = 2^2 x 3^2 x 7^2 x 11^2 = 213444

---

4. $\sqrt{1.5625}$ = ?

A.1.05   B.1.25

C.1.45   D.1.55

Answer & Explanation

Answer: Option **B**

Explanation:

```
 1|1.5625( 1.25
  |1
  |-------
22| 56
  | 44
  |-------
245| 1225
  | 1225
  |-------
  |   X
  |-------
```

$\therefore \sqrt{1.5625} = 1.25$.

---

5. If $\sqrt{35} + \sqrt{125} = 17.88$, then what will be the value of $\sqrt{80} + \sqrt{65}$?

A.13.41   B.20.46

C.21.66   D.22.35

Answer & Explanation

Answer: Option **D**

Explanation:

$35 + 125 = 17.88$

$\Rightarrow 35 + 25 \times 5 = 17.88$

$\Rightarrow 35 + 55 = 17.88$

$\Rightarrow 85 = 17.88$

$\Rightarrow 5 = 2.235$

$\therefore 80 + 65 = 16 \times 5 + 65$

$= 45 + 65$

$= 105 = (10 \times 2.235) = 22.35$

6. If $a = 0.1039$, then the value of $4a^2 - 4a + 1 + 3a$ is:
   A. 0.1039   B. 0.2078

   C. 1.1039   D. 2.1039

   Answer & Explanation

Answer: Option **C**

Explanation:

$4a^2 - 4a + 1 + 3a = (1)^2 + (2a)^2 - 2 \times 1 \times 2a + 3a$

$= (1 - 2a)^2 + 3a$

$= (1 - 2a) + 3a$

$= (1 + a)$

$= (1 + 0.1039)$

$= 1.1039$

7. If $x = \dfrac{3 + 1}{3 - 1}$ and $y = \dfrac{3 - 1}{3 + 1}$, then the value of $(x^2 + y^2)$ is:

   A. 10   B. 13

   C. 14   D. 15

   Answer & Explanation

Answer: Option **C**

Explanation:

$$x = \frac{(3 + 1)}{(3 - 1)} \times \frac{(3 + 1)}{(3 + 1)} = \frac{(3 + 1)^2}{(3 - 1)} = \frac{3 + 1 + 23}{2} = 2 + 3.$$

$$y = \frac{(3 - 1)}{(3 + 1)} \times \frac{(3 - 1)}{(3 - 1)} = \frac{(3 - 1)^2}{(3 - 1)} = \frac{3 + 1 - 23}{2} = 2 - 3.$$

$\therefore x^2 + y^2 = (2 + 3)^2 + (2 - 3)^2$

$= 2(4 + 3)$

$= 14$

8. A group of students decided to collect as many paise from each member of group as is the number of members. If the total collection amounts to Rs. 59.29, the number of the member is the group is:
   A. 57   B. 67

   C. 77   D. 87

   Answer & Explanation

Answer: Option **C**

Explanation:

Money collected = (59.29 x 100) paise = 5929 paise.

$\therefore$ Number of members = 5929 = 77.

9. The square root of (7 + 35) (7 - 35) is
   A. 5   B. 2

   C. 4   D. 35

   Answer & Explanation

Answer: Option **B**

Explanation:

$(7 + 35)(7 - 35) = (7)^2 - (35)^2 = 49 - 45 = 4 = 2.$

10. If $5 = 2.236$, then the value of $\dfrac{5}{2} - \dfrac{10}{5} + 125$ is equal to:

A.5.59   B.7.826

C.8.944   D.10.062

Answer & Explanation

Answer: Option **B**

Explanation:

$$\frac{5}{2} - \frac{10}{5} + 125 = \frac{(5)^2 - 20 + 25 \times 55}{25}$$

$$= \frac{5 - 20 + 50}{25}$$

$$= \frac{35}{25} \times \frac{5}{5}$$

$$= \frac{355}{10}$$

$$= \frac{7 \times 2.236}{2}$$

$$= 7 \times 1.118$$

$$= 7.826$$

11. $\begin{pmatrix} 625 & 14 & 11 \\ x & x & \\ 11 & 25 & 196 \end{pmatrix}$ is equal to:

A.5   B.6

C.8   D.11

Answer & Explanation

Answer: Option **A**

Explanation:

Given Expression $= \dfrac{25}{11} \times \dfrac{14}{5} \times \dfrac{11}{14} = 5.$

12. 0.0169 x ? = 1.3
    A.10   B.100

    C.1000   D.None of these

Answer & Explanation

Answer: Option **B**

Explanation:

Let $0.0169 \times x = 1.3$.

Then, $0.0169x = (1.3)^2 = 1.69$

$$\Rightarrow x = \frac{1.69}{0.0169} = 100$$

13. $\left(3 - \dfrac{1}{3}\right)^2$ simplifies to:

A. $\dfrac{3}{4}$ B. $\dfrac{4}{3}$

C. $\dfrac{4}{3}$ D.None of these

Answer & Explanation

Answer: Option **C**

Explanation:

$$\left(3 - \frac{1}{3}\right)^2 = (3)^2 + \left(\frac{1}{3}\right)^2 - 2 \times 3 \times \frac{1}{3}$$

$$= 3 + \frac{1}{3} - 2$$

$$= 1 + \frac{1}{3}$$

$$= \frac{4}{3}$$

14. How many two-digit numbers satisfy this property.: The

last digit (unit's digit) of the square of the two-digit number is 8 ?

A.1   B.2

C.3   D.None of these

Answer & Explanation

Answer: Option **D**

Explanation:

A number ending in 8 can never be a perfect square.

---

15. The square root of 64009 is:

A.253   B.347

C.363   D.803

Answer & Explanation

Answer: Option **A**

Explanation:

```
 2|64009( 253
  |4
  |----------
 45|240
  |225
  |----------
503| 1509
  | 1509
  |----------
  |   X
  |----------
```

$\therefore$ 64009 = 253.

9.Chain Rule

1. 3 pumps, working 8 hours a day, can empty a tank in 2 days. How many hours a day must 4 pumps work to empty the tank in 1 day?

A.9   B.10

C.11   D.12

Answer & Explanation

Answer: Option **D**

Explanation:

Let the required number of working hours per day be x.

More pumps, Less working hours per day (Indirect Proportion)

Less days, More working hours per day (Indirect Proportion)

$$\left.\begin{array}{l}\text{Pumps}\quad 4:3\\[4pt]\text{Days}\quad 1:2\end{array}\right\}:: 8 : x$$

$\therefore$ 4 x 1 x x = 3 x 2 x 8

$$\Rightarrow x = \frac{(3 \times 2 \times 8)}{(4)}$$

$\Rightarrow x = 12.$

---

2. If the cost of x metres of wire is d rupees, then what is the cost of y metres of wire at the same rate?

A.Rs. $\left(\dfrac{xy}{d}\right)$ B.Rs. (xd)

C.Rs. (yd) D.Rs. $\left(\dfrac{yd}{x}\right)$

Answer & Explanation

Answer: Option **D**

Explanation:

Cost of x metres = Rs. d.

Cost of 1 metre = Rs. $\left(\dfrac{d}{x}\right)$

Cost of y metres = Rs. $\left(\dfrac{d}{x} . y\right)$ = Rs. $\left(\dfrac{yd}{x}\right)$.

---

3. Running at the same constant rate, 6 identical machines can produce a total of 270 bottles per minute. At this rate, how many bottles could 10 such machines produce in 4 minutes?

A.648   B.1800

C.2700   D.10800

Answer & Explanation

Answer: Option **B**

Explanation:

Let the required number of bottles be x.

More machines, More bottles (Direct Proportion)

More minutes, More bottles (Direct Proportion)

Machines   6:10 ⎤
                    ⎬ **:: 270 :** x
Time (in minutes)1:4 ⎦

$\therefore$ 6 x 1 x x = 10 x 4 x 270

$$\Rightarrow x = \frac{(10 \times 4 \times 270)}{(6)}$$

$\Rightarrow x = 1800.$

---

4. A fort had provision of food for 150 men for 45 days. After 10 days, 25 men left the fort. The number of days for which the remaining food will last, is:

A.$29\frac{1}{5}$ B.$37\frac{1}{4}$

C.42   D.54

Answer & Explanation

Answer: Option **C**

Explanation:

After 10 days : 150 men had food for 35 days.

Suppose 125 men had food for x days.

Now, *Less men, More days (Indirect Proportion)*

$\therefore$ 125 : 150 **::** 35 : x $\Leftrightarrow$ 125 x x = 150 x 35

$$\Rightarrow x = \frac{150 \times 35}{125}$$

$\Rightarrow x = 42.$

5. 39 persons can repair a road in 12 days, working 5 hours a day. In how many days will 30 persons, working 6 hours a day, complete the work?

A.10   B.13

C.14   D.15

Answer & Explanation

Answer: Option **B**

Explanation:

Let the required number of days be x.

Less persons, More days (Indirect Proportion)

More working hours per day, Less days (Indirect Proportion)

Persons   30:39 ⎤
                    ⎬ **:: 12 :** x
Working hours/day 6:5 ⎦

$\therefore$ 30 x 6 x x = 39 x 5 x 12

$$\Rightarrow x = \frac{(39 \times 5 \times 12)}{(30 \times 6)}$$

$\Rightarrow x = 13.$

6. A man completes $\frac{5}{8}$ of a job in 10 days. At this rate, how many more days will it takes him to finish the job?

A.5   B.6

C.7   D.$7\frac{1}{2}$

Answer & Explanation

Answer: Option **B**

Explanation:

Work done = $\dfrac{5}{8}$

Balance work = $\left(1 - \dfrac{5}{8}\right) = \dfrac{3}{8}$

<div style="text-align:center">8   8</div>

Let the required number of days be x.

Then, $\dfrac{5}{8} : \dfrac{3}{8} :: 10 : x \iff \dfrac{5}{8} \times x = \dfrac{3}{8} \times 10$

$\Rightarrow x = \left(\dfrac{3}{8} \times 10 \times \dfrac{8}{5}\right)$

$\Rightarrow x = 6.$

---

7. If a quarter kg of potato costs 60 paise, how many paise will 200 gm cost?

A. 48 paise   B. 54 paise

C. 56 paise   D. 72 paise

Answer & Explanation

Answer: Option **A**

Explanation:

Let the required weight be x kg.

Less weight, Less cost (Direct Proportion)

$\therefore 250 : 200 :: 60 : x \iff 250 \times x = (200 \times 60)$

$\Rightarrow x = \dfrac{(200 \times 60)}{250}$

$\Rightarrow x = 48.$

---

8. In a dairy farm, 40 cows eat 40 bags of husk in 40 days. In how many days one cow will eat one bag of husk?

A. 1   B. $\dfrac{1}{40}$

C. 40   D. 80

Answer & Explanation

Answer: Option **C**

Explanation:

Let the required number of days be x.

Less cows, More days (Indirect Proportion)

Less bags, Less days (Direct Proportion)

$\left.\begin{array}{l} \text{Cows} \quad 1:40 \\ \text{Bags} \quad 40:1 \end{array}\right\} :: 40 : x$

$\therefore 1 \times 40 \times x = 40 \times 1 \times 40$

$\Rightarrow x = 40.$

---

9. A wheel that has 6 cogs is meshed with a larger wheel of 14 cogs. When the smaller wheel has made 21 revolutions, then the number of revolutions mad by the larger wheel is:

A. 4   B. 9

C. 12   D. 49

Answer & Explanation

Answer: Option **B**

Explanation:

Let the required number of revolutions made by larger wheel be x.

Then, *More cogs, Less revolutions (Indirect Proportion)*

$\therefore 14 : 6 :: 21 : x \iff 14 \times x = 6 \times 21$

$\Rightarrow x = \dfrac{6 \times 21}{14}$

$\Rightarrow x = 9.$

---

10. If 7 spiders make 7 webs in 7 days, then 1 spider will make 1 web in how many days?

A. 1   B. $\dfrac{7}{2}$

C. 7   D. 49

Answer & Explanation

Answer: Option **C**

Explanation:

Let the required number days be x.

Less spiders, More days (Indirect Proportion)

Less webs, Less days (Direct Proportion)

$$\left.\begin{array}{l}\text{Spiders } 1:7 \\ \text{Webs } \ \ 7:1\end{array}\right\} :: 7 : x$$

$\therefore$ 1 x 7 x x = 7 x 1 x 7

$\Rightarrow x = 7$.

11. A flagstaff 17.5 m high casts a shadow of length 40.25 m. The height of the building, which casts a shadow of length 28.75 m under similar conditions will be:
A. 10 m
B. 12.5 m

C. 17.5 m
D. 21.25 m

<u>Answer & Explanation</u>

Answer: Option **B**

Explanation:

Let the height of the building x metres.

Less lengthy shadow, Less in the height (Direct Proportion)

$\therefore$ 40.25 : 28.75 **::** 17.5 : x $\Leftrightarrow$ 40.25 x x = 28.75 x 17.5

$$x = \frac{28.75 \text{ x } 17.5}{40.25}$$

$\Rightarrow x = 12.5$

12. In a camp, there is a meal for 120 men or 200 children. If 150 children have taken the meal, how many men will be catered to with remaining meal?
A. 20
B. 30

C. 40
D. 50

<u>Answer & Explanation</u>

Answer: Option **B**

Explanation:

There is a meal for 200 children. 150 children have taken the meal.

Remaining meal is to be catered to 50 children.

Now, 200 children $\equiv$ 120 men.

50 children $\equiv \left(\dfrac{120}{200} \text{ x } 50\right)$ = 30 men.

---

13. An industrial loom weaves 0.128 metres of cloth every second. Approximately, how many seconds will it take for the loom to weave 25 metres of cloth?
A. 178
B. 195

C. 204
D. 488

<u>Answer & Explanation</u>

Answer: Option **B**

Explanation:

Le the required time be x seconds.

More metres, More time (Direct Proportion)

$\therefore$ 0.128 : 25 **::** 1 : x $\Leftrightarrow$ 0.128x = 25 x 1

$$x = \frac{25}{0.128} = \frac{25 \text{ x } 1000}{128}$$

$\Rightarrow x = 195.31$.

$\therefore$ Required time = 195 sec (approximately).

---

14. 36 men can complete a piece of work in 18 days. In how many days will 27 men complete the same work?
A. 12
B. 18

C. 22
D. 24

E. None of these

<u>Answer & Explanation</u>

Answer: Option **D**

Explanation:

Let the required number of days be x.

Less men, More days (Indirect Proportion)

$\therefore$ 27 : 36 **::** 18 : x $\Leftrightarrow$ 27 x x = 36 x 18

$\Rightarrow x = \dfrac{36 \times 18}{27}$

$\Rightarrow x = 24.$

---

15. 4 mat-weavers can weave 4 mats in 4 days. At the same rate, how many mats would be woven by 8 mat-weavers in 8 days?
A. 4   B. 8

C. 12   D. 16

Answer & Explanation

Answer: Option **D**

Explanation:

Let the required number of bottles be x.

More weavers, More mats (Direct Proportion)

More days, More mats (Direct Proportion)

$\left.\begin{array}{l}\text{Wavers} \quad 4{:}8 \\ \text{Days} \quad 4{:}8\end{array}\right\}$ :: 4 : x

$\therefore$ 4 x 4 x x = 8 x 8 x 4

$\Rightarrow x = \dfrac{(8 \times 8 \times 4)}{(4 \times 4)}$

$\Rightarrow x = 16.$

10. Alligation or Mixture

1. A vessel is filled with liquid, 3 parts of which are water and 5 parts syrup. How much of the mixture must be drawn off and replaced with water so that the mixture may be half water and half syrup?

A. $\dfrac{1}{3}$ B. $\dfrac{1}{4}$

C. $\dfrac{1}{5}$ D. $\dfrac{1}{7}$

Answer & Explanation

Answer: Option **C**

Explanation:

Suppose the vessel initially contains 8 litres of liquid.

Let x litres of this liquid be replaced with water.

Quantity of water in new mixture $= \left(3 - \dfrac{3x}{8} + x\right)$ litres

Quantity of syrup in new mixture $= \left(5 - \dfrac{5x}{8}\right)$ litres

$\therefore \left(3 - \dfrac{3x}{8} + x\right) = \left(5 - \dfrac{5x}{8}\right)$

$\Rightarrow 5x + 24 = 40 - 5x$

$\Rightarrow 10x = 16$

$\Rightarrow x = \dfrac{8}{5}.$

So, part of the mixture replaced $= \left(\dfrac{8}{5} \times \dfrac{1}{8}\right) = \dfrac{1}{5}.$

---

2. Tea worth Rs. 126 per kg and Rs. 135 per kg are mixed with a third variety in the ratio 1 : 1 : 2. If the mixture is worth Rs. 153 per kg, the price of the third variety per kg will be:

A. Rs. 169.50   B. Rs. 170

C. Rs. 175.50   D. Rs. 180

Answer & Explanation

Answer: Option **C**

Explanation:

Since first and second varieties are mixed in equal proportions.

So, their average price = Rs. $\left(\dfrac{126 + 135}{2}\right)$ = Rs. 130.50

So, the mixture is formed by mixing two varieties, one at Rs. 130.50 per kg and the other at say, Rs. x per kg in the ratio 2 : 2, *i.e.,* 1 : 1. We have to find x.

By the rule of alligation, we have:

Cost of 1 kg of 1st kind   Cost of 1 kg tea of 2nd kind

Rs. 130.50

(x - 153)

Mean Price
Rs. 153

Rs. x

22.50

$\therefore \dfrac{x - 153}{22.50} = 1$

$\Rightarrow x - 153 = 22.50$

$\Rightarrow x = 175.50$

---

3. A can contains a mixture of two liquids A and B is the ratio 7 : 5. When 9 litres of mixture are drawn off and the can is filled with B, the ratio of A and B becomes 7 : 9. How many litres of liquid A was contained by the can initially?

A. 10   B. 20

C. 21   D. 25

Answer & Explanation

Answer: Option **C**

Explanation:

Suppose the can initially contains $7x$ and $5x$ of mixtures A and B respectively.

Quantity of A in mixture left = $\left(7x - \dfrac{7}{12} \times 9\right)$ litres $= \left(7x - \dfrac{21}{4}\right)$ litres.

Quantity of B in mixture left = $\left(5x - \dfrac{5}{12} \times 9\right)$ litres $= \left(5x - \dfrac{15}{4}\right)$ litres.

$\therefore \dfrac{\left(7x - \dfrac{21}{4}\right)}{\left(5x - \dfrac{15}{4}\right) + 9} = \dfrac{7}{9}$

$\Rightarrow \dfrac{28x - 21}{20x + 21} = \dfrac{7}{9}$

$\Rightarrow 252x - 189 = 140x + 147$

$\Rightarrow 112x = 336$

$\Rightarrow x = 3.$

So, the can contained 21 litres of A.

---

4. A milk vendor has 2 cans of milk. The first contains 25% water and the rest milk. The second contains 50% water. How much milk should he mix from each of the containers so as to get 12 litres of milk such that the ratio of water to milk is 3 : 5?

A. 4 litres, 8 litres   B. 6 litres, 6 litres

C. 5 litres, 7 litres   D. 7 litres, 5 litres

Answer & Explanation

Answer: Option **B**

Explanation:

Let the cost of 1 litre milk be Re. 1

Milk in 1 litre mix. in 1st can = $\dfrac{3}{4}$ litre, C.P. of 1 litre mix. in 1st can Re. $\dfrac{3}{4}$

Milk in 1 litre mix. in 2nd can = $\dfrac{1}{2}$ litre, C.P. of 1 litre mix. in 2nd can Re. $\dfrac{1}{2}$

Milk in 1 litre of final mix. = $\dfrac{5}{8}$ litre, Mean price = Re. $\dfrac{5}{8}$

By the rule of alligation, we have:

C.P. of 1 litre mixture in 1ˢᵗ can   C.P. of 1 litre mixture in 2ⁿᵈ can

$\dfrac{3}{4}$ Mean Price $\dfrac{1}{2}$

$\dfrac{5}{8}$

$\dfrac{1}{8}$ $\dfrac{1}{8}$

∴ Ratio of two mixtures $= \dfrac{1}{8} : \dfrac{1}{8} = 1 : 1$.

So, quantity of mixture taken from each can $= \left(\dfrac{1}{2} \times 12 \right) = 6$ litres.

---

5. In what ratio must a grocer mix two varieties of pulses costing Rs. 15 and Rs. 20 per kg respectively so as to get a mixture worth Rs. 16.50 kg?

  A. 3 : 7   B. 5 : 7

  C. 7 : 3   D. 7 : 5

Answer & Explanation

Answer: Option **C**

Explanation:

By the rule of alligation:

Cost of 1 kg pulses of 1ˢᵗ kind   Cost of 1 kg pulses of 2ⁿᵈ kind

Rs. 15   Mean Price   Rs. 20

3.50   Rs. 16.50   1.50

∴ Required rate $= 3.50 : 1.50 = 7 : 3$.

6. A dishonest milkman professes to sell his milk at cost price but he mixes it with water and thereby gains 25%. The percentage of water in the mixture is:

  A. 4%   B. $6\dfrac{1}{4}$%

  C. 20%   D. 25%

Answer & Explanation

Answer: Option **C**

Explanation:

Let C.P. of 1 litre milk be Re. 1

Then, S.P. of 1 litre of mixture = Re. 1, Gain = 25%.

C.P. of 1 litre mixture = Re. $\left(\dfrac{100}{125} \times 1 \right) = \dfrac{4}{5}$

By the rule of alligation, we have:

C.P. of 1 litre of milk   C.P. of 1 litre of water

Re. 1   Mean Price   0

$\dfrac{4}{5}$ Re. $\dfrac{4}{5}$ $\dfrac{1}{5}$

∴ Ratio of milk to water $= \dfrac{4}{5} : \dfrac{1}{5} = 4 : 1$.

Hence, percentage of water in the mixture $= \left(\dfrac{1}{5} \times 100 \right)\% = 20\%$.

---

7. How many kilogram of sugar costing Rs. 9 per kg must be mixed with 27 kg of sugar costing Rs. 7 per kg so that there may be a gain of 10% by selling the mixture at Rs. 9.24 per kg?

  A. 36 kg   B. 42 kg

  C. 54 kg   D. 63 kg

Answer & Explanation

Answer: Option **D**

Explanation:

S.P. of 1 kg of mixture = Rs. 9.24, Gain 10%.

∴ C.P. of 1 kg of mixture = Rs. $\left(\dfrac{100}{110} \times 9.24 \right) = $ Rs. 8.40

By the rule of allilation, we have:

C.P. of 1 kg sugar of 1ˢᵗ kind   Cost of 1 kg sugar of 2ⁿᵈ kind

Rs. 9	Mean Price	Rs. 7
1.40	Rs. 8.40	0.60

∴ Ratio of quantities of 1st and 2nd kind = 14 : 6 = 7 : 3.

Let x kg of sugar of 1st be mixed with 27 kg of 2nd kind.

Then, 7 : 3 = x : 27

$$\Rightarrow x = \left(\frac{7 \times 27}{3} \right) = 63 \text{ kg.}$$

---

8. A container contains 40 litres of milk. From this container 4 litres of milk was taken out and replaced by water. This process was repeated further two times. How much milk is now contained by the container?

A. 26.34 litres   B. 27.36 litres

C. 28 litres   D. 29.16 litres

Answer & Explanation

Answer: Option **D**

Explanation:

Amount of milk left after 3 operations = $\left[40 \left(1 - \frac{4}{40} \right)^3 \right]$ litres

$= \left(40 \times \frac{9}{10} \times \frac{9}{10} \times \frac{9}{10} \right) = 29.16$ litres.

---

9. A jar full of whisky contains 40% alcohol. A part of this whisky is replaced by another containing 19% alcohol and now the percentage of alcohol was found to be 26%. The quantity of whisky replaced is:

A. $\frac{1}{3}$ B. $\frac{2}{3}$

C. $\frac{2}{5}$ D. $\frac{3}{5}$

Answer & Explanation

Answer: Option **B**

Explanation:

By the rule of alligation, we have:

Strength of first jar   Strength of 2nd jar

40%	Mean Strength	19%
7	26%	14

So, ratio of 1st and 2nd quantities = 7 : 14 = 1 : 2

∴ Required quantity replaced = $\frac{2}{3}$

---

10. In what ratio must water be mixed with milk to gain $16\frac{2}{3}$% on selling the mixture at cost price?

A. 1 : 6   B. 6 : 1

C. 2 : 3   D. 4 : 3

Answer & Explanation

Answer: Option **A**

Explanation:

Let C.P. of 1 litre milk be Re. 1.

S.P. of 1 litre of mixture = Re.1, Gain = $\frac{50}{3}$%.

∴ C.P. of 1 litre of mixture = $\left(100 \times \frac{3}{350} \times 1 \right) = \frac{6}{7}$

By the rule of alligation, we have:

C.P. of 1 litre of water   C.P. of 1 litre of milk

0	Mean Price	Re. 1
$\frac{1}{7}$	Re. $\frac{6}{7}$	$\frac{6}{7}$

∴ Ratio of water and milk = 1:6 = 1 : 6.

11. Find the ratio in which rice at Rs. 7.20 a kg be mixed with rice at Rs. 5.70 a kg to produce a mixture worth Rs.

6.30 a kg.

A. 1 : 3   B. 2 : 3

C. 3 : 4   D. 4 : 5

Answer & Explanation

Answer: Option **B**

Explanation:

By the rule of alligation:

Cost of 1 kg of 1st kind   Cost of 1 kg of 2nd kind

720 p   Mean Price   570 p

60   630 p   90

∴ Required ratio = 60 : 90 = 2 : 3.

---

12. In what ratio must a grocer mix two varieties of tea worth Rs. 60 a kg and Rs. 65 a kg so that by selling the mixture at Rs. 68.20 a kg he may gain 10%?

A. 3 : 2   B. 3 : 4

C. 3 : 5   D. 4 : 5

Answer & Explanation

Answer: Option **A**

Explanation:

S.P. of 1 kg of the mixture = Rs. 68.20, Gain = 10%.

C.P. of 1 kg of the mixture = Rs. $\left(\dfrac{100}{110} \times 68.20 \right)$ = Rs. 62.

By the rule of alligation, we have:

Cost of 1 kg tea of 1st kind.   Cost of 1 kg tea of 2nd kind.

Rs. 60   Mean Price   Rs. 65

3   Rs. 62   2

∴ Required ratio = 3 : 2.

---

13. The cost of Type 1 rice is Rs. 15 per kg and Type 2 rice is Rs. 20 per kg. If both Type 1 and Type 2 are mixed in the ratio of 2 : 3, then the price per kg of the mixed variety of rice is:

A. Rs. 18   B. Rs. 18.50

C. Rs. 19   D. Rs. 19.50

Answer & Explanation

Answer: Option **A**

Explanation:

Let the price of the mixed variety be Rs. x per kg.

By rule of alligation, we have:

Cost of 1 kg of Type 1 rice   Cost of 1 kg of Type 2 rice

Rs. 15   Mean Price   Rs. 20

(20 - x)   Rs. x (x - 15)

∴ $\dfrac{(20 - x)}{(x - 15)} = \dfrac{2}{3}$

⟹ 60 - 3x = 2x - 30

⟹ 5x = 90

⟹ x = 18.

---

14. 8 litres are drawn from a cask full of wine and is then filled with water. This operation is performed three more times. The ratio of the quantity of wine now left in cask to that of water is 16 : 65. How much wine did the cask hold originally?

A. 18 litres   B. 24 litres

C. 32 litres   D. 42 litres

Answer & Explanation

Answer: Option **B**

Explanation:

Let the quantity of the wine in the cask originally be x litres.

Then, quantity of wine left in cask after 4 operations = $\left[x \left(1 - \dfrac{8}{x} \right)^4 \right]$ litres.

$$\therefore \left(\frac{x(1 - (8/x))^4}{x}\right) = \frac{16}{81}$$

$$\Rightarrow \left(1 - \frac{8}{x}\right)4 = \left(\frac{2}{3}\right)4$$

$$\Rightarrow \left(\frac{x - 8}{x}\right) = \frac{2}{3}$$

$$\Rightarrow 3x - 24 = 2x$$

$$\Rightarrow x = 24.$$

15. A merchant has 1000 kg of sugar, part of which he sells at 8% profit and the rest at 18% profit. He gains 14% on the whole. The quantity sold at 18% profit is:

A. 400 kg   B. 560 kg

C. 600 kg   D. 640 kg

Answer & Explanation

Answer: Option **C**

Explanation:

By the rule of alligation, we have:

Profit on 1st part   Profit on 2nd part

8%   Mean Profit   18%

4   14%   6

Ration of 1st and 2nd parts = 4 : 6 = 2 : 3

$$\therefore \text{Quantity of 2nd kind} = \left(\frac{3}{5} \times 1000\right)\text{kg} = 600 \text{ kg}.$$

11. Stocks and Shares

1. In order to obtain an income of Rs. 650 from 10% stock at Rs. 96, one must make an investment of:

A. Rs. 3100   B. Rs. 6240

C. Rs. 6500   D. Rs. 9600

Answer & Explanation

Answer: Option **B**

Explanation:

To obtain Rs. 10, investment = Rs. 96.

To obtain Rs. 650, investment = Rs. $\left(\frac{96}{10} \times 650\right)$ = Rs. 6240.

2. A man bought 20 shares of Rs. 50 at 5 discount, the rate of dividend being 13$\frac{1}{2}$. The rate of interest obtained is:

A. 12$\frac{1}{2}$%   B. 13$\frac{1}{2}$%

C. 15%   D. 16$\frac{2}{3}$%

Answer & Explanation

Answer: Option **C**

Explanation:

Investment = Rs. [20 x (50 - 5)] = Rs. 900.

Face value = Rs. (50 x 20) = Rs. 1000.

Dividend = Rs. $\left(\frac{27}{2} \times \frac{1000}{100}\right)$ = Rs. 135.

Interest obtained = $\left(\frac{135}{900} \times 100\right)\%$ = 15%

3. Which is better investment: 11% stock at 143 or 9$\frac{3}{4}$% stock at 117?

A. 11% stock at 143

B. 9$\frac{3}{4}$% stock at 117

C. Both are equally good

D. Cannot be compared, as the total amount of investment

is not given.

Answer: Option **B**

Explanation:

Let investment in each case be Rs. (143 x 117).

Income in 1st case = Rs. $\left(\dfrac{11}{143} \times 143 \times 117 \right)$ = Rs. 1287.

Income in 2nd case = Rs. $\left(\dfrac{39}{4} \times \dfrac{143}{117} \times 143 \times 117 \right)$ = Rs. 1394.25

Clearly, $9\dfrac{3}{4}$% stock at 117 is better.

---

4. A man buys Rs. 20 shares paying 9% dividend. The man wants to have an interest of 12% on his money. The market value of each share is:
A. Rs. 12　　　　　　　　　B. Rs. 15

C. Rs. 18　　　　　　　　　D. Rs. 21

Answer: Option **B**

Explanation:

Dividend on Rs. 20 = Rs. $\left(\dfrac{9}{100} \times 20 \right)$ = Rs. $\dfrac{9}{5}$.

Rs. 12 is an income on Rs. 100.

$\therefore$ Rs. $\dfrac{9}{5}$ is an income on Rs. $\left(\dfrac{100}{12} \times \dfrac{9}{5} \right)$ = Rs. 15.

5.
By investing in $16\dfrac{2}{3}$% stock at 64, one earns Rs. 1500. The investment made is:
A. Rs. 5640　　　　　　　　B. Rs. 5760

C. Rs. 7500　　　　　　　　D. Rs. 9600

Answer: Option **B**

Explanation:

To earn Rs. $\dfrac{50}{3}$, investment = Rs. 64.

To earn Rs. 1500, investment = Rs. $\left(64 \times \dfrac{3}{50} \times 1500 \right)$ = Rs. 5760.

6. A 6% stock yields 8%. The market value of the stock is:
A. Rs. 48　　　　　　　　　B. Rs. 75

C. Rs. 96　　　　　　　　　D. Rs. 133.33

Answer: Option **B**

Explanation:

For an income of Rs. 8, investment = Rs. 100.

For an income of Rs. 6, investment = Rs. $\left(\dfrac{100}{8} \times 6 \right)$ = Rs. 75.

$\therefore$ Market value of Rs. 100 stock = Rs. 75.

---

7. A man invested Rs. 4455 in Rs. 10 shares quoted at Rs. 8.25. If the rate of dividend be 12%, his annual income is:
A. Rs. 207.40　　　　　　　B. Rs. 534.60

C. Rs. 648　　　　　　　　　D. Rs. 655.60

Answer: Option **C**

Explanation:

Number of shares = $\left(\dfrac{4455}{8.25} \right)$ = 540.

Face value = Rs. (540 x 10) = Rs. 5400.

Annual income = Rs. $\left(\dfrac{12}{100} \times 5400\right)$ = Rs. 648.

---

8. Rs. 9800 are invested partly in 9% stock at 75 and 10% stock at 80 to have equal amount of incomes. The investment in 9% stock is:

A.Rs. 4800   B.Rs. 5000

C.Rs. 5400   D.Rs. 5600

Answer & Explanation

Answer: Option **B**

Explanation:

Let the investment in 9% stock be Rs. x.

Then, investment in 10% stock = Rs. (9800 - x).

$$\dfrac{9}{75} \times x = \dfrac{10}{80} \times (9800 - x)$$

$$\Rightarrow \dfrac{3x}{25} = \dfrac{9800 - x}{8}$$

$\Rightarrow 24x = 9800 \times 25 - 25x$

$\Rightarrow 49x = 9800 \times 25$

$\Rightarrow x = 5000.$

---

9. A man invests some money partly in 9% stock at 96 and partly in 12% stock at 120. To obtain equal dividends from both, he must invest the money in the ratio:

A.3 : 4   B.3 : 5

C.4 : 5   D.16 : 15

Answer & Explanation

Answer: Option **D**

Explanation:

For an income of Re. 1 in 9% stock at 96, investment = Rs. $\left(\dfrac{96}{9}\right)$ = Rs. $\dfrac{32}{3}$

For an income Re. 1 in 12% stock at 120, investment = Rs. $\left(\dfrac{120}{12}\right)$ = Rs. 10.

$\therefore$ Ratio of investments = $\dfrac{32}{3}$: 10 = 32 : 30 = 16 : 15.

---

10. By investing Rs. 1620 in 8% stock, Michael earns Rs. 135. The stock is then quoted at:

A.Rs. 80   B.Rs. 96

C.Rs. 106   D.Rs. 108

Answer & Explanation

Answer: Option **B**

Explanation:

To earn Rs. 135, investment = Rs. 1620.

To earn Rs. 8, investment = Rs. $\left(\dfrac{1620}{135} \times 8\right)$ = Rs. 96.

$\therefore$ Market value of Rs. 100 stock = Rs. 96.

11. A man invested Rs. 1552 in a stock at 97 to obtain an income of Rs. 128. The dividend from the stock is:

A.7.5%   B.8%

C.9.7%   D.None of these

Answer & Explanation

Answer: Option **B**

Explanation:

By investing Rs. 1552, income = Rs. 128.

By investing Rs. 97, income = Rs. $\left(\dfrac{128}{1552} \times 97\right)$ = Rs. 8.

$\therefore$ Dividend = 8%

---

12. A 12% stock yielding 10% is quoted at:

A.Rs. 83.33   B.Rs. 110

C.Rs. 112   D.Rs. 120

Answer: Option **D**

Explanation:

To earn Rs. 10, money invested = Rs. 100.

To earn Rs. 12, money invested = Rs. $\left(\dfrac{100}{10} \times 12 \right)$ = Rs. 120.

∴ Market value of Rs. 100 stock = Rs. 120.

---

13. The market value of a 10.5% stock, in which an income of Rs. 756 is derived by investing Rs. 9000, brokerage being $\dfrac{1}{4}$%, is:
A.Rs. 108.25   B.Rs. 112.20

C.Rs. 124.75   D.Rs. 125.25

Answer: Option **C**

Explanation:

For an income of Rs. 756, investment = Rs. 9000.

For an income of Rs. $\dfrac{21}{2}$, investment = Rs. $\left(\dfrac{9000}{756} \times \dfrac{21}{2} \right)$ = Rs. 125.

∴ For a Rs. 100 stock, investment = Rs. 125.

Market value of Rs. 100 stock = Rs. $\left(125 - \dfrac{1}{4} \right)$ = Rs. 124.75

---

14. The cost price of a Rs. 100 stock at 4 discount, when brokerage is $\dfrac{1}{4}$% is:

A.Rs. 95.75   B.Rs. 96

C.Rs. 96.25   D.Rs. 104.25

Answer: Option **C**

Explanation:

$$\text{C.P.} = \text{Rs.} \left(100 - 4 + \dfrac{1}{4} \right) = \text{Rs. } 96.25$$

---

15. Sakshi invests a part of Rs. 12,000 in 12% stock at Rs. 120 and the remainder in 15% stock at Rs. 125. If his total dividend per annum is Rs. 1360, how much does he invest in 12% stock at Rs. 120?
A.Rs. 4000   B.Rs. 4500

C.Rs. 5500   D.Rs. 6000

Answer: Option **A**

Explanation:

Let investment in 12% stock be Rs. x.

Then, investment in 15% stock = Rs. (12000 - x).

∴ $\dfrac{12}{120} \times x + \dfrac{15}{125} \times (12000 - x) = 1360$.

⟹ $\dfrac{x}{10} + \dfrac{3}{25} (12000 - x) = 1360$.

⟹ 5x + 72000 - 6x = 1360 x 50

⟹ x = 4000

12 Banker's Discount

1. The banker's discount on a bill due 4 months hence at 15% is Rs. 420. The true discount is:
A.Rs. 400   B.Rs. 360

C.Rs. 480   D.Rs. 320

Answer: Option **A**

Explanation:

T.D.= B.D. x 100

$$100 + (R \times T)$$

$$= Rs. \left[\frac{420 \times 100}{100 + \left(15 \times \frac{1}{3}\right)} \right]$$

$$= Rs. \left(\frac{420 \times 100}{105} \right)$$

$$= Rs. \; 400.$$

---

2. The banker's discount on Rs. 1600 at 15% per annum is the same as true discount on Rs. 1680 for the same time and at the same rate. The time is:

A. 3 months   B. 4 months

C. 6 months   D. 8 months

Answer & Explanation

Answer: Option **B**

Explanation:

S.I. on Rs. 1600 = T.D. on Rs. 1680.

$\therefore$ Rs. 1600 is the P.W. of Rs. 1680, *i.e.,* Rs. 80 is on Rs. 1600 at 15%.

$$\therefore \text{Time} = \left(\frac{100 \times 80}{1600 \times 15} \right) \text{year} = \frac{1}{3} \text{ year} = 4 \text{ months.}$$

---

3. The banker's gain of a certain sum due 2 years hence at 10% per annum is Rs. 24. The present worth is:

A. Rs. 480   B. Rs. 520

C. Rs. 600   D. Rs. 960

Answer & Explanation

Answer: Option **C**

Explanation:

$$\text{T.D.} = \left(\frac{B.G. \times 100}{\text{Rate} \times \text{Time}} \right) = Rs. \left(\frac{24 \times 100}{10 \times 2} \right) = Rs. \; 120.$$

$\therefore$ P.W. $= 100 \times$ T.D. $= Rs. \left(\frac{100 \times 120}{ } \right) = Rs. \; 600.$

Rate x Time   10 x 2

---

4. The banker's discount on a sum of money for $1\frac{1}{2}$ years is Rs. 558 and the true discount on the same sum for 2 years is Rs. 600. The rate percent is:

A. 10%   B. 13%

C. 12%   D. 15%

Answer & Explanation

Answer: Option **C**

Explanation:

B.D. for $\frac{3}{2}$ years $= Rs. \; 558.$

$$\text{B.D. for 2 years} = Rs. \left(558 \times \frac{2}{3} \times 2 \right)$$

$$= Rs. \; 744$$

T.D. for 2 years = Rs. 600.

$$\therefore \text{Sum} = \frac{B.D. \times T.D.}{B.D. - T.D} = Rs. \left(\frac{744 \times 600}{144} \right) = Rs. \; 3100.$$

Thus, Rs. 744 is S.I. on Rs. 3100 for 2 years.

$$\therefore \text{Rate} = \left(\frac{100 \times 744}{3100 \times 2} \right)\% = 12\%$$

---

5. The banker's gain on a sum due 3 years hence at 12% per annum is Rs. 270. The banker's discount is:

A. Rs. 960   B. Rs. 840

C. Rs. 1020   D. Rs. 760

Answer & Explanation

Answer: Option **C**

Explanation:

$$\text{T.D.} = \left(\frac{\text{B.G. x 100}}{\text{R x T}}\right) = \text{Rs.} \left(\frac{270 \text{ x } 100}{12 \text{ x } 3}\right) = \text{Rs. } 750.$$

∴ B.D. = Rs.(750 + 270) = Rs. 1020.

6. The banker's discount of a certain sum of money is Rs. 72 and the true discount on the same sum for the same time is Rs. 60. The sum due is:

A. Rs. 360   B. Rs. 432

C. Rs. 540   D. Rs. 1080

Answer & Explanation

Answer: Option **A**

Explanation:

$$\text{Sum} = \frac{\text{B.D. x T.D.}}{\text{B.D. - T.D.}} = \text{Rs.} \left(\frac{72 \text{ x } 60}{72 - 60}\right) = \text{Rs.} \left(\frac{72 \text{ x } 60}{12}\right) = \text{Rs. } 360.$$

7. The certain worth of a certain sum due sometime hence is Rs. 1600 and the true discount is Rs. 160. The banker's gain is:

A. Rs. 20   B. Rs. 24

C. Rs. 16   D. Rs. 12

Answer & Explanation

Answer: Option **C**

Explanation:

$$\text{B.G.} = \frac{(\text{T.D.})^2}{\text{P.W.}} = \text{Rs.} \left(\frac{160 \text{ x } 160}{1600}\right) = \text{Rs. } 16.$$

8. The present worth of a certain bill due sometime hence is Rs. 800 and the true discount is Rs. 36. The banker's discount is:

A. Rs. 37   B. Rs. 37.62

C. Rs. 34.38   D. Rs. 38.98

Answer & Explanation

Answer: Option **B**

Explanation:

$$\text{B.G.} = \frac{(\text{T.D.})^2}{\text{P.W.}} = \text{Rs.} \left(\frac{36 \text{ x } 36}{800}\right) = \text{Rs. } 1.62$$

∴ B.D. = (T.D. + B.G.) = Rs. (36 + 1.62) = Rs. 37.62

---

9. The banker's gain on a bill due 1 year hence at 12% per annum is Rs. 6. The true discount is:

A. Rs. 72   B. Rs. 36

C. Rs. 54   D. Rs. 50

Answer & Explanation

Answer: Option **D**

Explanation:

$$\text{T.D.} = \frac{\text{B.G. x 100}}{\text{R x T}} = \text{Rs.} \left(\frac{6 \text{ x } 100}{12 \text{ x } 1}\right) = \text{Rs. } 50.$$

---

10. The banker's gain on a certain sum due $1\frac{1}{2}$ years hence is $\frac{3}{25}$ of the banker's discount. The rate percent is:

A. $5\frac{1}{5}$ %   B. $9\frac{1}{11}$ %

C. $8\frac{1}{8}$ %   D. $6\frac{1}{6}$ %

Answer & Explanation

Answer: Option **B**

Explanation:

Let, B.D = Re. 1.

Then, B.G. = Re. $\frac{3}{25}$.

$\therefore$ T.D. = (B.D. - B.G.) = Re. $\left(1 - \dfrac{3}{25}\right)$ = Re. $\dfrac{22}{25}$.

Sum = $\left(\dfrac{1 \times (22/25)}{1-(22/25)}\right)$ = Rs. $\dfrac{22}{3}$.

S.I. on Rs. $\dfrac{22}{3}$ for $1\dfrac{1}{2}$ years is Re. 1.

$\therefore$ Rate = $\left(\dfrac{100 \times 1}{\dfrac{22}{3} \times \dfrac{3}{2}}\right)_{\%}$ = $\dfrac{100}{11}$ = $9\dfrac{1}{11}$ %.

11. The present worth of a sum due sometime hence is Rs. 576 and the banker's gain is Rs. 16. The true discount is:
A. Rs. 36   B. Rs. 72

C. Rs. 48   D. Rs. 96

Answer & Explanation

Answer: Option **D**

Explanation:

T.D. = $\sqrt{\text{P.W.} \times \text{B.G.}}$ = $\sqrt{576 \times 16}$ = 96.

---

12. The true discount on a bill of Rs. 540 is Rs. 90. The banker's discount is:
A. Rs. 60   B. Rs. 108

C. Rs. 110   D. Rs. 112

Answer & Explanation

Answer: Option **B**

Explanation:

P.W. = Rs. (540 - 90) = Rs. 450.

$\therefore$ S.I. on Rs. 450 = Rs. 90.

S.I. on Rs. 540 = Rs. $\left(\dfrac{90}{450} \times 540\right)$ = Rs. 108.

$\therefore$ B.D. = Rs. 108.

---

13. The banker's discount on a certain sum due 2 years hence is $\dfrac{11}{10}$ of the true discount.

The rate percent is:
A. 11%   B. 10%

C. 5%   D. 5.5%

Answer & Explanation

Answer: Option **C**

Explanation:

Let T.D. be Re. 1.

Then, B.D. = Rs. $\dfrac{11}{10}$ = Rs. 1.10.

$\therefore$ Sum = Rs. $\left(\dfrac{1.10 \times 1}{1.10 - 1}\right)$ = Rs. $\left(\dfrac{110}{10}\right)$ = Rs. 11.

$\therefore$ S.I. on Rs. 11 for 2 years is Rs. 1.10

$\therefore$ Rate = $\left(\dfrac{100 \times 1.10}{11 \times 2}\right)_{\%}$ = 5%.

13. Time and Distance

1. A person crosses a 600 m long street in 5 minutes. What is his speed in km per hour?
A. 3.6   B. 7.2

C. 8.4   D. 10

Answer & Explanation

Answer: Option **B**

Explanation:

Speed = $\left(\dfrac{600}{5 \times 60}\right)$ m/sec.

= 2 m/sec.

Converting m/sec to km/hr (see important formulas

section)

$$= \left(2 \times \frac{18}{5}\right) \text{km/hr}$$

= 7.2 km/hr.

---

2. An aeroplane covers a certain distance at a speed of 240 kmph in 5 hours. To cover the same distance in $1\frac{2}{3}$ hours, it must travel at a speed of:

A. 300 kmph   B. 360 kmph

C. 600 kmph   D. 720 kmph

Answer & Explanation

Answer: Option **D**

Explanation:

Distance = (240 x 5) = 1200 km.

Speed = Distance/Time

Speed = 1200/(5/3) km/hr. [We can write $1\frac{2}{3}$ hours as 5/3 hours]

∴ Required speed = $\left(1200 \times \frac{3}{5}\right) \text{km/hr}$ = 720 km/hr.

---

3. If a person walks at 14 km/hr instead of 10 km/hr, he would have walked 20 km more. The actual distance travelled by him is:

A. 50 km   B. 56 km

C. 70 km   D. 80 km

Answer & Explanation

Answer: Option **A**

Explanation:

Let the actual distance travelled be x km.

Then, $\dfrac{x}{10} = \dfrac{x + 20}{14}$

$\Rightarrow 14x = 10x + 200$

$\Rightarrow 4x = 200$

$\Rightarrow x = 50$ km.

---

4. A train can travel 50% faster than a car. Both start from point A at the same time and reach point B 75 kms away from A at the same time. On the way, however, the train lost about 12.5 minutes while stopping at the stations. The speed of the car is:

A. 100 kmph   B. 110 kmph

C. 120 kmph   D. 130 kmph

Answer & Explanation

Answer: Option **C**

Explanation:

Let speed of the car be x kmph.

Then, speed of the train = $\dfrac{150}{100}x = \left(\dfrac{3}{2}x\right)$ kmph.

∴ $\dfrac{75}{x} - \dfrac{75}{(3/2)x} = \dfrac{125}{10 \times 60}$

$\Rightarrow \dfrac{75}{x} - \dfrac{50}{x} = \dfrac{5}{24}$

$\Rightarrow x = \left(\dfrac{25 \times 24}{5}\right) = 120$ kmph.

---

5. Excluding stoppages, the speed of a bus is 54 kmph and including stoppages, it is 45 kmph. For how many minutes does the bus stop per hour?

A. 9   B. 10

C. 12   D. 20

Answer & Explanation

Answer: Option **B**

Explanation:

Due to stoppages, it covers 9 km less.

Time taken to cover 9 km $= \left(\dfrac{9}{54} \times 60 \right)_{min} = 10$ min.

6. In a flight of 600 km, an aircraft was slowed down due to bad weather. Its average speed for the trip was reduced by 200 km/hr and the time of flight increased by 30 minutes. The duration of the flight is:

A. 1 hour   B. 2 hours

C. 3 hours   D. 4 hours

Answer & Explanation

Answer: Option **A**

Explanation:

Let the duration of the flight be x hours.

Then, $\dfrac{600}{x} - \dfrac{600}{x + (1/2)} = 200$

$\Rightarrow \dfrac{600}{x} - \dfrac{1200}{2x + 1} = 200$

$\Rightarrow x(2x + 1) = 3$

$\Rightarrow 2x^2 + x - 3 = 0$

$\Rightarrow (2x + 3)(x - 1) = 0$

$\Rightarrow x = 1$ hr.   [neglecting the -ve value of x]

7. A man complete a journey in 10 hours. He travels first half of the journey at the rate of 21 km/hr and second half at the rate of 24 km/hr. Find the total journey in km.

A. 220 km   B. 224 km

C. 230 km   D. 234 km

Answer & Explanation

Answer: Option **B**

Explanation:

$\dfrac{(1/2)x}{21} + \dfrac{(1/2)x}{24} = 10$

$\Rightarrow x + x = 20$

$\dfrac{21 \quad 24}{}$

$\Rightarrow 15x = 168 \times 20$

$\Rightarrow x = \left(\dfrac{168 \times 20}{15} \right) = 224$ km.

8. The ratio between the speeds of two trains is 7 : 8. If the second train runs 400 km in 4 hours, then the speed of the first train is:

A. 70 km/hr   B. 75 km/hr

C. 84 km/hr   D. 87.5 km/hr

Answer & Explanation

Answer: Option **D**

Explanation:

Let the speed of two trains be $7x$ and $8x$ km/hr.

Then, $8x = \left(\dfrac{400}{4} \right) = 100$

$\Rightarrow x = \left(\dfrac{100}{8} \right) = 12.5$

$\therefore$ Speed of first train $= (7 \times 12.5)$ km/hr $= 87.5$ km/hr.

9. A man on tour travels first 160 km at 64 km/hr and the next 160 km at 80 km/hr. The average speed for the first 320 km of the tour is:

A. 35.55 km/hr   B. 36 km/hr

C. 71.11 km/hr   D. 71 km/hr

Answer & Explanation

Answer: Option **C**

Explanation:

Total time taken $= \left(\dfrac{160}{64} + \dfrac{160}{80} \right)_{hrs.} = \dfrac{9}{2}$ hrs.

$\therefore$ Average speed $= \left(\dfrac{320 \times 2}{9} \right)_{km/hr} = 71.11$ km/hr.

10. A car travelling with $\dfrac{5}{7}$ of its actual speed covers 42 km in 1 hr 40 min 48 sec. Find the actual speed of the car.

A. $17\dfrac{6}{7}$ km/hr   B. 25 km/hr

C. 30 km/hr   D. 35 km/hr

Answer & Explanation

Answer: Option **D**

Explanation:

Time taken = 1 hr 40 min 48 sec $= 1$ hr $40\dfrac{4}{5}$ min $= 1\dfrac{51}{75}$ hrs $= \dfrac{126}{75}$ hrs.

Let the actual speed be x km/hr.

Then, $x \times \dfrac{5}{7} \times \dfrac{126}{75} = 42$

$\Rightarrow x = \left(\dfrac{42 \times 7 \times 75}{5 \times 126}\right) = 35$ km/hr.

11. In covering a distance of 30 km, Abhay takes 2 hours more than Sameer. If Abhay doubles his speed, then he would take 1 hour less than Sameer. Abhay's speed is:

A. 5 kmph   B. 6 kmph

C. 6.25 kmph   D. 7.5 kmph

Answer & Explanation

Answer: Option **A**

Explanation:

Let Abhay's speed be x km/hr.

Then, $\dfrac{30}{x} - \dfrac{30}{2x} = 3$

$\Rightarrow 6x = 30$

$\Rightarrow x = 5$ km/hr.

12. Robert is travelling on his cycle and has calculated to reach point A at 2 P.M. if he travels at 10 kmph, he will reach there at 12 noon if he travels at 15 kmph. At what speed must he travel to reach A at 1 P.M.?

A. 8 kmph   B. 11 kmph

C. 12 kmph   D. 14 kmph

Answer & Explanation

Answer: Option **C**

Explanation:

Let the distance travelled by x km.

Then, $\dfrac{x}{10} - \dfrac{x}{15} = 2$

$\Rightarrow 3x - 2x = 60$

$\Rightarrow x = 60$ km.

Time taken to travel 60 km at 10 km/hr $= \left(\dfrac{60}{10}\right) = 6$ hrs.

So, Robert started 6 hours before 2 P.M. *i.e.,* at 8 A.M.

∴ Required speed $= \left(\dfrac{60}{5}\right)$ kmph $= 12$ kmph.

13. It takes eight hours for a 600 km journey, if 120 km is done by train and the rest by car. It takes 20 minutes more, if 200 km is done by train and the rest by car. The ratio of the speed of the train to that of the cars is:

A. 2 : 3   B. 3 : 2

C. 3 : 4   D. 4 : 3

Answer & Explanation

Answer: Option **C**

Explanation:

Let the speed of the train be x km/hr and that of the car be y km/hr.

Then, $\dfrac{120}{x} + \dfrac{480}{y} = 8 \implies \dfrac{1}{x} + \dfrac{4}{y} = \dfrac{1}{15}$ ....(i)

And, $\dfrac{200}{x} + \dfrac{400}{y} = \dfrac{25}{3} \implies \dfrac{1}{x} + \dfrac{2}{y} = \dfrac{1}{24}$ ....(ii)

Solving (i) and (ii), we get: $x = 60$ and $y = 80$.

∴ Ratio of speeds = 60 : 80 = 3 : 4.

---

14. A farmer travelled a distance of 61 km in 9 hours. He travelled partly on foot @ 4 km/hr and partly on bicycle @ 9 km/hr. The distance travelled on foot is:
A. 14 km   B. 15 km

C. 16 km   D. 17 km

Answer & Explanation

Answer: Option **C**

Explanation:

Let the distance travelled on foot be x km.

Then, distance travelled on bicycle = $(61 - x)$ km.

So, $\dfrac{x}{4} + \dfrac{(61 - x)}{9} = 9$

$\implies 9x + 4(61 - x) = 9 \times 36$

$\implies 5x = 80$

$\implies x = 16$ km.

---

15. A man covered a certain distance at some speed. Had he moved 3 kmph faster, he would have taken 40 minutes less. If he had moved 2 kmph slower, he would have taken 40 minutes more. The distance (in km) is:
A. 35   B. $36\dfrac{2}{3}$

C. $37\dfrac{1}{2}$ D. 40

Answer & Explanation

Answer: Option **D**

Explanation:

Let distance = x km and usual rate = y kmph.

Then, $\dfrac{x}{y} - \dfrac{x}{y + 3} = \dfrac{40}{60} \implies 2y(y + 3) = 9x$ ....(i)

And, $\dfrac{x}{y - 2} - \dfrac{x}{y} = \dfrac{40}{60} \implies y(y - 2) = 3x$ ....(ii)

On dividing (i) by (ii), we get: $x = 40$

---

14. Simple Interest

1. A sum of money at simple interest amounts to Rs. 815 in 3 years and to Rs. 854 in 4 years. The sum is:
A. Rs. 650   B. Rs. 690

C. Rs. 698   D. Rs. 700

Answer & Explanation

Answer: Option **C**

Explanation:

S.I. for 1 year = Rs. (854 - 815) = Rs. 39.

S.I. for 3 years = Rs.(39 x 3) = Rs. 117.

∴ Principal = Rs. (815 - 117) = Rs. 698.

---

2. Mr. Thomas invested an amount of Rs. 13,900 divided in two different schemes A and B at the simple interest rate of 14% p.a. and 11% p.a. respectively. If the total amount of simple interest earned in 2 years be Rs. 3508, what was the amount invested in Scheme B?
A. Rs. 6400   B. Rs. 6500

C. Rs. 7200   D. Rs. 7500

E. None of these

Answer & Explanation

Answer: Option **A**

Explanation:

Let the sum invested in Scheme A be Rs. x and that in Scheme B be Rs. $(13900 - x)$.

Then, $\left(\dfrac{x \times 14 \times 2}{100}\right) + \left(\dfrac{(13900 - x) \times 11 \times 2}{100}\right) = 3508$

$\Rightarrow 28x - 22x = 350800 - (13900 \times 22)$

$\Rightarrow 6x = 45000$

$\Rightarrow x = 7500.$

So, sum invested in Scheme B = Rs. $(13900 - 7500)$ = Rs. 6400.

3. A sum fetched a total simple interest of Rs. 4016.25 at the rate of 9 p.c.p.a. in 5 years. What is the sum?
A. Rs. 4462.50   B. Rs. 8032.50

C. Rs. 8900   D. Rs. 8925

E. None of these

Answer & Explanation

Answer: Option **D**

Explanation:

Principal $=$ Rs. $\left(\dfrac{100 \times 4016.25}{9 \times 5}\right)$

$=$ Rs. $\left(\dfrac{401625}{45}\right)$

$=$ Rs. 8925.

4. How much time will it take for an amount of Rs. 450 to yield Rs. 81 as interest at 4.5% per annum of simple interest?
A. 3.5 years   B. 4 years

C. 4.5 years   D. 5 years

Answer & Explanation

Answer: Option **B**

Explanation:

Time $= \left(\dfrac{100 \times 81}{450 \times 4.5}\right)$ years $= 4$ years.

5. Reena took a loan of Rs. 1200 with simple interest for as many years as the rate of interest. If she paid Rs. 432 as interest at the end of the loan period, what was the rate of interest?
A. 3.6   B. 6

C. 18   D. Cannot be determined

E. None of these

Answer & Explanation

Answer: Option **B**

Explanation:

Let rate = R% and time = R years.

Then, $\left(\dfrac{1200 \times R \times R}{100}\right) = 432$

$\Rightarrow 12R^2 = 432$

$\Rightarrow R^2 = 36$

$\Rightarrow R = 6.$

6. A sum of Rs. 12,500 amounts to Rs. 15,500 in 4 years at the rate of simple interest. What is the rate of interest?
A. 3%   B. 4%

C. 5%   D. 6%

E. None of these

Answer & Explanation

Answer: Option **D**

Explanation:

S.I. = Rs. $(15500 - 12500)$ = Rs. 3000.

Rate $= \left(\dfrac{100 \times 3000}{12500 \times 4}\right)\%= 6\%$

7. An automobile financier claims to be lending money at

simple interest, but he includes the interest every six months for calculating the principal. If he is charging an interest of 10%, the effective rate of interest becomes:

A.10%   B.10.25%

C.10.5%   D.None of these

Answer & Explanation

Answer: Option **B**

Explanation:

Let the sum be Rs. 100. Then,

$$\text{S.I. for first 6 months} = \text{Rs.} \left(\frac{100 \times 10 \times 1}{100 \times 2} \right) = \text{Rs. } 5$$

$$\text{S.I. for last 6 months} = \text{Rs.} \left(\frac{105 \times 10 \times 1}{100 \times 2} \right) = \text{Rs. } 5.25$$

So, amount at the end of 1 year = Rs. (100 + 5 + 5.25) = Rs. 110.25

∵ Effective rate = (110.25 - 100) = 10.25%

---

8. A lent Rs. 5000 to B for 2 years and Rs. 3000 to C for 4 years on simple interest at the same rate of interest and received Rs. 2200 in all from both of them as interest. The rate of interest per annum is:

A.5%   B.7%

C.7 $\frac{1}{8}$ %   D.10%

Answer & Explanation

Answer: Option **D**

Explanation:

Let the rate be R% p.a.

$$\text{Then,} \left(\frac{5000 \times R \times 2}{100} \right) + \left(\frac{3000 \times R \times 4}{100} \right) = 2200.$$

$$\Rightarrow 100R + 120R = 2200$$

$$\Rightarrow R = \left(\frac{2200}{220} \right) = 10.$$

220

∵ Rate = 10%.

---

9. A sum of Rs. 725 is lent in the beginning of a year at a certain rate of interest. After 8 months, a sum of Rs. 362.50 more is lent but at the rate twice the former. At the end of the year, Rs. 33.50 is earned as interest from both the loans. What was the original rate of interest?

A.3.6%   B.4.5%

C.5%   D.6%

E.None of these

Answer & Explanation

Answer: Option **E**

Explanation:

Let the original rate be R%. Then, new rate = (2R)%.

Note:
Here, original rate is for 1 year(s); the new rate is for only 4 months i.e. $\frac{1}{3}$ year(s).

$$\therefore \left(\frac{725 \times R \times 1}{100} \right) + \left(\frac{362.50 \times 2R \times 1}{100 \times 3} \right) = 33.50$$

$$\Rightarrow (2175 + 725) R = 33.50 \times 100 \times 3$$

$$\Rightarrow (2175 + 725) R = 10050$$

$$\Rightarrow (2900)R = 10050$$

$$\Rightarrow R = \frac{10050}{2900} = 3.46$$

∵ Original rate = 3.46%

---

10. A man took loan from a bank at the rate of 12% p.a. simple interest. After 3 years he had to pay Rs. 5400 interest only for the period. The principal amount borrowed by him was:

A.Rs. 2000   B.Rs. 10,000

C.Rs. 15,000   D.Rs. 20,000

Answer: Option **C**

Explanation:

$$\text{Principal} = \text{Rs.} \left(\frac{100 \times 5400}{12 \times 3} \right) = \text{Rs. } 15000.$$

11. A sum of money amounts to Rs. 9800 after 5 years and Rs. 12005 after 8 years at the same rate of simple interest. The rate of interest per annum is:
    A.5%   B.8%

    C.12%   D.15%

Answer: Option **C**

Explanation:

S.I. for 3 years = Rs. (12005 - 9800) = Rs. 2205.

$$\text{S.I. for 5 years} = \text{Rs.} \left(\frac{2205}{3} \times 5 \right) = \text{Rs. } 3675$$

∴ Principal = Rs. (9800 - 3675) = Rs. 6125.

$$\text{Hence, rate} = \left(\frac{100 \times 3675}{6125 \times 5} \right)\% = 12\%$$

12. What will be the ratio of simple interest earned by certain amount at the same rate of interest for 6 years and that for 9 years?
    A.1 : 3   B.1 : 4

    C.2 : 3   D.Data inadequate

    E. None of these

Answer: Option **C**

Explanation:

Let the principal be P and rate of interest be R%.

∴ Required ratio = $\left(\dfrac{P \times R \times 6}{100} \right)$

$\left(\dfrac{P \times R \times 9}{100} \right)$ = $\dfrac{9PR}{9}$ = $\dfrac{6PR}{6}$ = 2 : 3.

13. A certain amount earns simple interest of Rs. 1750 after 7 years. Had the interest been 2% more, how much more interest would it have earned?
    A.Rs. 35   B.Rs. 245

    C.Rs. 350   D.Cannot be determined

    E. None of these

Answer: Option **D**

Explanation:

We need to know the S.I., principal and time to find the rate.

Since the principal is not given, so data is inadequate.

14. A person borrows Rs. 5000 for 2 years at 4% p.a. simple interest. He immediately lends it to another person at $6\frac{1}{4}$ p.a for 2 years. Find his gain in the transaction per year.
    A.Rs. 112.50   B.Rs. 125

    C.Rs. 150   D.Rs. 167.50

Answer: Option **A**

Explanation:

$$\text{Gain in 2 years} = \text{Rs.} \left[\left(5000 \times \frac{25}{4} \times \frac{2}{100} \right) - \left(\frac{5000 \times 4 \times 2}{100} \right) \right]$$

= Rs. (625 - 400)

= Rs. 225.

∴ Gain in 1 year = Rs. $\left(\dfrac{225}{2} \right)$ = Rs. 112.50

15. Partnership

1. A and B invest in a business in the ratio 3 : 2. If 5% of the total profit goes to charity and A's share is Rs. 855, the total profit is:

A. Rs. 1425   B. Rs. 1500

C. Rs. 1537.50   D. Rs. 1576

Answer & Explanation

Answer: Option **B**

Explanation:

Let the total profit be Rs. 100.

After paying to charity, A's share = Rs. $\left(95 \times \dfrac{3}{5} \right)$ = Rs. 57.

If A's share is Rs. 57, total profit = Rs. 100.

If A's share Rs. 855, total profit = $\left(\dfrac{100}{57} \times 855 \right)$ = 1500.

---

2. A, B and C jointly thought of engaging themselves in a business venture. It was agreed that A would invest Rs. 6500 for 6 months, B, Rs. 8400 for 5 months and C, Rs. 10,000 for 3 months. A wants to be the working member for which, he was to receive 5% of the profits. The profit earned was Rs. 7400. Calculate the share of B in the profit.

A. Rs. 1900   B. Rs. 2660

C. Rs. 2800   D. Rs. 2840

Answer & Explanation

Answer: Option **B**

Explanation:

For managing, A received = 5% of Rs. 7400 = Rs. 370.

Balance = Rs. (7400 - 370) = Rs. 7030.

Ratio of their investments = (6500 x 6) : (8400 x 5) : (10000 x 3)

= 39000 : 42000 : 30000

= 13 : 14 : 10

∴ B's share = Rs. $\left(7030 \times \dfrac{14}{37} \right)$ = Rs. 2660.

3. A, B and C enter into a partnership in the ratio $\dfrac{7}{2} : \dfrac{4}{3} : \dfrac{6}{5}$. After 4 months, A increases his share 50%. If the total profit at the end of one year be Rs. 21,600, then B's share in the profit is:

A. Rs. 2100   B. Rs. 2400

C. Rs. 3600   D. Rs. 4000

Answer & Explanation

Answer: Option **D**

Explanation:

Ratio of initial investments = $\left(\dfrac{7}{2} : \dfrac{4}{3} : \dfrac{6}{5} \right)$ = 105 : 40 : 36.

Let the initial investments be 105x, 40x and 36x.

∴ A : B : C = $\left(105x \times 4 + \dfrac{150}{100} \times 105x \times 8 \right) : (40x \times 12) : (36x \times 12)$

= 1680x : 480x : 432x = 35 : 10 : 9.

Hence, B's share = Rs. $\left(21600 \times \dfrac{10}{54} \right)$ = Rs. 4000.

4. A, B, C subscribe Rs. 50,000 for a business. A subscribes Rs. 4000 more than B and B Rs. 5000 more than C. Out of a total profit of Rs. 35,000, A receives:

A. Rs. 8400   B. Rs. 11,900

C. Rs. 13,600   D. Rs. 14,700

Answer & Explanation

Answer: Option **D**

Explanation:

Let C = x.

Then, B = x + 5000 and A = x + 5000 + 4000 = x + 9000.

So, $x + x + 5000 + x + 9000 = 50000$

$\Rightarrow 3x = 36000$

$\Rightarrow x = 12000$

A : B : C = 21000 : 17000 : 12000 = 21 : 17 : 12.

$\therefore$ A's share = Rs. $\left(35000 \times \dfrac{21}{50}\right)$ = Rs. 14,700.

5. Three partners shared the profit in a business in the ratio 5 : 7 : 8. They had partnered for 14 months, 8 months and 7 months respectively. What was the ratio of their investments?

A.5 : 7 : 8   B.20 : 49 : 64

C.38 : 28 : 21   D.None of these

Answer & Explanation

Answer: Option **B**

Explanation:

Let their investments be Rs. x for 14 months, Rs. y for 8 months and Rs. z for 7 months respectively.

Then, $14x : 8y : 7z = 5 : 7 : 8$.

Now, $\dfrac{14x}{8y} = \dfrac{5}{7} \iff 98x = 40y \iff y = \dfrac{49}{20}x$

And, $\dfrac{14x}{7z} = \dfrac{5}{8} \iff 112x = 35z \iff z = \dfrac{112}{35}x = \dfrac{16}{5}x.$

$\therefore x : y : z = x : \dfrac{49}{20}x : \dfrac{16}{5}x = 20 : 49 : 64.$

6. A starts business with Rs. 3500 and after 5 months, B joins with A as his partner. After a year, the profit is divided in the ratio 2 : 3. What is B's contribution in the capital?

A.Rs. 7500   B.Rs. 8000

C.Rs. 8500   D.Rs. 9000

Answer & Explanation

Answer: Option **D**

Explanation:

Let B's capital be Rs. x.

Then, $\left(\dfrac{3500 \times 12}{7x} = \dfrac{2}{3}\right)$

$\Rightarrow 14x = 126000$

$\Rightarrow x = 9000.$

7. A and B entered into partnership with capitals in the ratio 4 : 5. After 3 months, A withdrew $\dfrac{1}{4}$ of his capital and B withdrew $\dfrac{1}{5}$ of his capital. The gain at the end of 10 months was Rs. 760. A's share in this profit is:

A.Rs. 330   B.Rs. 360

C.Rs. 380   D.Rs. 430

Answer & Explanation

Answer: Option **A**

Explanation:

$A : B = \left[4x \times 3 + \left(4x - \dfrac{1}{4}4x\right) \times 7\right] : \left[5x \times 3 + \left(5x - \dfrac{1}{5}5x\right) \times 7\right]$

$= (12x + 21x) : (15x + 28x)$

$= 33x : 43x$

$= 33 : 43.$

$\therefore$ A's share = Rs. $\left(760 \times \dfrac{33}{76}\right)$ = Rs. 330.

8. A and B started a partnership business investing some amount in the ratio of 3 : 5. C joined then after six months with an amount equal to that of B. In what proportion should the profit at the end of one year be distributed among A, B and C?

A.3 : 5 : 2   B.3 : 5 : 5

C.6 : 10 : 5   D.Data inadequate

Answer & Explanation

Answer: Option **C**

Explanation:

Let the initial investments of A and B be $3x$ and $5x$.

A : B : C = $(3x \times 12) : (5x \times 12) : (5x \times 6) = 36 : 60 : 30 = 6 : 10 : 5$.

---

9. A, B, C rent a pasture. A puts 10 oxen for 7 months, B puts 12 oxen for 5 months and C puts 15 oxen for 3 months for grazing. If the rent of the pasture is Rs. 175, how much must C pay as his share of rent?
   A.Rs. 45   B.Rs. 50

   C.Rs. 55   D.Rs. 60

   Answer & Explanation

   Answer: Option **A**

   Explanation:

   A : B : C = $(10 \times 7) : (12 \times 5) : (15 \times 3) = 70 : 60 : 45 = 14 : 12 : 9$.

   $\therefore$ C's rent = Rs. $\left(175 \times \dfrac{9}{35} \right)$ = Rs. 45.

10. A and B started a business in partnership investing Rs. 20,000 and Rs. 15,000 respectively. After six months, C joined them with Rs. 20,000. What will be B's share in total profit of Rs. 25,000 earned at the end of 2 years from the starting of the business?
    A.Rs. 7500   B.Rs. 9000

    C.Rs. 9500   D.Rs. 10,000

    Answer & Explanation

    Answer: Option **A**

    Explanation:

    A : B : C = $(20,000 \times 24) : (15,000 \times 24) : (20,000 \times 18)$ = $4 : 3 : 3$.

    $\therefore$ B's share = Rs. $\left(25000 \times \dfrac{3}{10} \right)$ = Rs. 7,500.

11. A began a business with Rs. 85,000. He was joined afterwards by B with Rs. 42,500. For how much period does B join, if the profits at the end of the year are divided in the ratio of 3 : 1?
    A.4 months   B.5 months

    C.6 months   D.8 months

    Answer & Explanation

    Answer: Option **D**

    Explanation:

    Suppose B joined for x months. Then,

    Then, $\left(\dfrac{85000 \times 12}{42500 \times x} = \dfrac{3}{1} \right)$

    $\Rightarrow x = \left(\dfrac{85000 \times 12}{42500 \times 3} \right) = 8$.

    So, B joined for 8 months.

---

12. Aman started a business investing Rs. 70,000. Rakhi joined him after six months with an amount of Rs.. 1,05,000 and Sagar joined them with Rs. 1.4 lakhs after another six months. The amount of profit earned should be distributed in what ratio among Aman, Rakhi and Sagar respectively, 3 years after Aman started the business?
    A.7 : 6 : 10   B.12 : 15 : 16

    C.42 : 45 : 56   D.Cannot be determined

    Answer & Explanation

    Answer: Option **B**

    Explanation:

    Aman : Rakhi : Sagar = $(70,000 \times 36) : (1,05,000 \times 30) : (1,40,000 \times 24) = 12 : 15 : 16$.

---

13. Arun, Kamal and Vinay invested Rs. 8000, Rs. 4000 and Rs. 8000 respectively in a business. Arun left after six months. If after eight months, there was a gain of Rs. 4005, then what will be the share of Kamal?
    A.Rs. 890   B.Rs. 1335

    C.Rs. 1602   D.Rs. 1780

    Answer & Explanation

Answer: Option **A**

Explanation:

Arun : Kamal : Vinay = (8,000 x 6) : (4,000 x 8) : (8,000 x 8)

= 48 : 32 : 64

= 3 : 2 : 4.

∴ Kamal's share = Rs. $\left(4005 \times \dfrac{2}{9} \right)$ = Rs. 890.

---

14. Simran started a software business by investing Rs. 50,000. After six months, Nanda joined her with a capital of Rs. 80,000. After 3 years, they earned a profit of Rs. 24,500. What was Simran's share in the profit?
A. Rs. 9,423　　　　　　　B. Rs. 10,250

C. Rs. 12,500　　　　　　　D. Rs. 10,500

Answer & Explanation

Answer: Option **D**

Explanation:

Simran : Nanda = (50000 x 36) : (80000 x 30) = 3 : 4.

∴ Simran's share = Rs. $\left(24500 \times \dfrac{3}{7} \right)$ = Rs. 10,500.

16. Calendar

1. It was Sunday on Jan 1, 2006. What was the day of the week Jan 1, 2010?
A. Sunday　　　　　　　B. Saturday

C. Friday　　　　　　　D. Wednesday

Answer & Explanation

Answer: Option **C**

Explanation:

On 31st December, 2005 it was Saturday.

Number of odd days from the year 2006 to the year 2009 = (1 + 1 + 2 + 1) = 5 days.

∴ On 31st December 2009, it was Thursday.

Thus, on 1st Jan, 2010 it is Friday.

---

2. What was the day of the week on 28th May, 2006?
A. Thursday　　　　　　　B. Friday

C. Saturday　　　　　　　D. Sunday

Answer & Explanation

Answer: Option **D**

Explanation:

28 May, 2006 = (2005 years + Period from 1.1.2006 to 28.5.2006)

Odd days in 1600 years = 0

Odd days in 400 years = 0

5 years = (4 ordinary years + 1 leap year) = (4 x 1 + 1 x 2) ≡ 6 odd days

Jan.　Feb.　March　April　May
(31 +　28　+　31　+　30　+　28) = 148 days

∴ 148 days = (21 weeks + 1 day) ≡ 1 odd day.

Total number of odd days = (0 + 0 + 6 + 1) = 7 ≡ 0 odd day.

Given day is Sunday.

---

3. What was the day of the week on 17th June, 1998?
A. Monday　　　　　　　B. Tuesday

C. Wednesday　　　　　　　D. Thursday

Answer & Explanation

Answer: Option **C**

Explanation:

17th June, 1998 = (1997 years + Period from 1.1.1998 to 17.6.1998)

Odd days in 1600 years = 0

Odd days in 300 years = (5 x 3) ≡ 1

97 years has 24 leap years + 73 ordinary years.

Number of odd days in 97 years (24 x 2 + 73) = 121 = 2 odd days.

Jan. Feb. March April May June
(31 + 28 + 31 + 30 + 31 + 17) = 168 days

∴ 168 days = 24 weeks = 0 odd day.

Total number of odd days = (0 + 1 + 2 + 0) = 3.

Given day is Wednesday.

---

4. What will be the day of the week 15th August, 2010?
A.Sunday   B.Monday

C.Tuesday   D.Friday

Answer & Explanation

Answer: Option **A**

Explanation:

15th August, 2010 = (2009 years + Period 1.1.2010 to 15.8.2010)

Odd days in 1600 years = 0

Odd days in 400 years = 0

9 years = (2 leap years + 7 ordinary years) = (2 x 2 + 7 x 1) = 11 odd days ≡ 4 odd days.

Jan. Feb. March April May June July Aug.
(31 + 28 + 31 + 30 + 31 + 30 + 31 + 15) = 227 days

∴ 227 days = (32 weeks + 3 days) ≡ 3 odd days.

Total number of odd days = (0 + 0 + 4 + 3) = 7 ≡ 0 odd days.

Given day is Sunday.

---

5. Today is Monday. After 61 days, it will be:
A.Wednesday   B.Saturday

C.Tuesday   D.Thursday

Answer & Explanation

Answer: Option **B**

Explanation:

Each day of the week is repeated after 7 days.

So, after 63 days, it will be Monday.

∴ After 61 days, it will be Saturday.

6. **If 6th March, 2005 is Monday,** what was the day of the week on 6th March, 2004?
A.Sunday   B.Saturday

C.Tuesday   D.Wednesday

Answer & Explanation

Answer: Option **A**

Explanation:

The year 2004 is a leap year. So, it has 2 odd days.

But, Feb 2004 not included because we are calculating from March 2004 to March 2005. So it has 1 odd day only.

∴ The day on 6th March, 2005 will be 1 day beyond the day on 6th March, 2004.

Given that, 6th March, 2005 is Monday.

∴ 6th March, 2004 is Sunday (1 day before to 6th March, 2005).

---

7. On what dates of April, 2001 did Wednesday fall?
A.1st, 8th, 15th, 22nd, 29th B.2nd, 9th, 16th, 23rd, 30th

C.3rd, 10th, 17th, 24th D.4th, 11th, 18th, 25th

Answer & Explanation

Answer: Option **D**

Explanation:

We shall find the day on 1st April, 2001.

1st April, 2001 = (2000 years + Period from 1.1.2001 to 1.4.2001)

Odd days in 1600 years = 0

Odd days in 400 years = 0

Jan. Feb. March April
$(31 + 28 + 31 + 1)$ $= 91$ days $\equiv 0$ odd days.

Total number of odd days $= (0 + 0 + 0) = 0$

On 1st April, 2001 it was Sunday.

In April, 2001 Wednesday falls on 4th, 11th, 18th and 25th.

---

8. How many days are there in x weeks x days?
    A.$7x^2$ B.$8x$

    C.$14x$ D.7

Answer & Explanation

Answer: Option **B**

Explanation:

x weeks x days $= (7x + x)$ days $= 8x$ days.

9. The last day of a century cannot be
    A.Monday   B.Wednesday

    C.Tuesday   D.Friday

Answer & Explanation

Answer: Option **C**

Explanation:

100 years contain 5 odd days.

$\therefore$ Last day of 1st century is Friday.

200 years contain (5 x 2) $\equiv 3$ odd days.

$\therefore$ Last day of 2nd century is Wednesday.

300 years contain (5 x 3) $= 15$ $\equiv 1$ odd day.

$\therefore$ Last day of 3rd century is Monday.

400 years contain 0 odd day.

$\therefore$ Last day of 4th century is Sunday.

This cycle is repeated.

$\therefore$ Last day of a century cannot be Tuesday or Thursday or Saturday.

10. On 8th Feb, 2005 it was Tuesday. What was the day of the week on 8th Feb, 2004?
    A.Tuesday   B.Monday

    C.Sunday   D.Wednesday

Answer & Explanation

Answer: Option **C**

Explanation:

The year 2004 is a leap year. It has 2 odd days.

$\therefore$ The day on 8th Feb, 2004 is 2 days before the day on 8th Feb, 2005.

Hence, this day is Sunday.

11. The calendar for the year 2007 will be the same for the year:
    A.2014   B.2016

    C.2017   D.2018

Answer & Explanation

Answer: Option **D**

Explanation:

Count the number of odd days from the year 2007 onwards to get the sum equal to 0 odd day.

Year   : 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017
Odd day : 1   2   1   1   1   2   1   1   1   2   1

Sum $= 14$ odd days $\equiv 0$ odd days.

$\therefore$ Calendar for the year 2018 will be the same as for the year 2007.

---

12. Which of the following is not a leap year?
    A.700   B.800

    C.1200   D.2000

Answer & Explanation

Answer: Option **A**

Explanation:

The century divisible by 400 is a leap year.

∵ The year 700 is not a leap year.

---

13. On 8th Dec, 2007 Saturday falls. What day of the week was it on 8th Dec, 2006?
A. Sunday   B. Thursday

C. Tuesday   D. Friday

Answer & Explanation

Answer: Option **D**

Explanation:

The year 2006 is an ordinary year. So, it has 1 odd day.

So, the day on 8th Dec, 2007 will be 1 day beyond the day on 8th Dec, 2006.

But, 8th Dec, 2007 is Saturday.

∵ 8th Dec, 2006 is Friday.

---

14. January 1, 2008 is Tuesday. What day of the week lies on Jan 1, 2009?
A. Monday   B. Wednesday

C. Thursday   D. Sunday

Answer & Explanation

Answer: Option **C**

Explanation:

The year 2008 is a leap year. So, it has 2 odd days.

1st day of the year 2008 is Tuesday (Given)

So, 1st day of the year 2009 is 2 days beyond Tuesday.

Hence, it will be Thursday.

---

15. January 1, 2007 was Monday. What day of the week lies on Jan. 1, 2008?
A. Monday   B. Tuesday

C. Wednesday   D. Sunday

Answer & Explanation

Answer: Option **B**

Explanation:

The year 2007 is an ordinary year. So, it has 1 odd day.

1st day of the year 2007 was Monday.

1st day of the year 2008 will be 1 day beyond Monday.

Hence, it will be Tuesday.

---

17. Area

1. The ratio between the length and the breadth of a rectangular park is 3 : 2. If a man cycling along the boundary of the park at the speed of 12 km/hr completes one round in 8 minutes, then the area of the park (in sq. m) is:
A. 15360   B. 153600

C. 30720   D. 307200

Answer & Explanation

Answer: Option **B**

Explanation:

Perimeter = Distance covered in 8 min. = $\left(\dfrac{12000}{60} \times 8 \right)$ m = 1600 m.

Let length = 3x metres and breadth = 2x metres.

Then, 2(3x + 2x) = 1600 or x = 160.

∵ Length = 480 m and Breadth = 320 m.

∵ Area = (480 x 320) m^2 = 153600 m^2.

---

2. An error 2% in excess is made while measuring the side of a square. The percentage of error in the calculated area of the square is:
A. 2%   B. 2.02%

C. 4%   D. 4.04%

Answer & Explanation

Answer: Option **D**

Explanation:

100 cm is read as 102 cm.

$\therefore A_1 = (100 \times 100) \text{ cm}^2$ and $A_2 (102 \times 102) \text{ cm}^2$.

$(A_2 - A_1) = [(102)^2 - (100)^2]$

$= (102 + 100) \times (102 - 100)$

$= 404 \text{ cm}^2$.

$\therefore$ Percentage error $= \left(\dfrac{404}{100 \times 100} \times 100 \right)_{\%} = 4.04\%$

---

3. The ratio between the perimeter and the breadth of a rectangle is 5 : 1. If the area of the rectangle is 216 sq. cm, what is the length of the rectangle?
A. 16 cm
B. 18 cm

C. 24 cm
D. Data inadequate

E. None of these

Answer & Explanation

Answer: Option **B**

Explanation:

$\dfrac{2(l + b)}{b} = \dfrac{5}{1}$

$\Rightarrow 2l + 2b = 5b$

$\Rightarrow 3b = 2l$

$b = \dfrac{2}{3} l$

Then, Area $= 216 \text{ cm}^2$

$\Rightarrow l \times b = 216$

$\Rightarrow l \times \dfrac{2}{3} l = 216$

$\Rightarrow l^2 = 324$

$\Rightarrow l = 18 \text{ cm}$.

---

4. The percentage increase in the area of a rectangle, if each of its sides is increased by 20% is:
A. 40%
B. 42%

C. 44%
D. 46%

Answer & Explanation

Answer: Option **C**

Explanation:

Let original length $= x$ metres and original breadth $= y$ metres.

Original area $= (xy) \text{ m}^2$.

New length $= \left(\dfrac{120}{100} x \right)_{\text{m}} = \left(\dfrac{6}{5} x \right)_{\text{m}}$.

New breadth $= \left(\dfrac{120}{100} y \right)_{\text{m}} = \left(\dfrac{6}{5} y \right)_{\text{m}}$.

New Area $= \left(\dfrac{6}{5} x \times \dfrac{6}{5} y \right)_{\text{m}^2} = \left(\dfrac{36}{25} xy \right)_{\text{m}^2}$.

The difference between the original area = xy and new-area 36/25 xy is

$= (36/25)xy - xy$

$= xy(36/25 - 1)$

$= xy(11/25)$ or $(11/25)xy$

$\therefore$ Increase % $= \left(\dfrac{11}{25} xy \times \dfrac{1}{xy} \times 100 \right)_{\%} = 44\%$.

---

5. A rectangular park 60 m long and 40 m wide has two concrete crossroads running in the middle of the park and rest of the park has been used as a lawn. If the area of the lawn is 2109 sq. m, then what is the width of the road?
A. 2.91 m
B. 3 m

C. 5.82 m
D. None of these

Answer & Explanation

Answer: Option **B**

Explanation:

Area of the park = (60 x 40) m^2 = 2400 m^2.

Area of the lawn = 2109 m^2.

∴ Area of the crossroads = (2400 - 2109) m^2 = 291 m^2.

Let the width of the road be x metres. Then,

$60x + 40x - x^2 = 291$

$\Rightarrow x^2 - 100x + 291 = 0$

$\Rightarrow (x - 97)(x - 3) = 0$

$\Rightarrow x = 3$

6. The diagonal of the floor of a rectangular closet is $7\frac{1}{2}$ feet. The shorter side of the closet is $4\frac{1}{2}$ feet. What is the area of the closet in square feet?

A. $5\frac{1}{4}$ B. $13\frac{1}{2}$

C. 27   D. 37

Answer & Explanation

Answer: Option **C**

Explanation:

Other side $= \sqrt{\left(\frac{15}{2}\right)^2 - \left(\frac{9}{2}\right)^2}$ ft

$= \sqrt{\frac{22}{5} - \frac{8}{1}}{4} - \frac{1}{4}$ ft

$= \sqrt{\frac{14}{4}}{4}$ ft

$= 6$ ft.

∴ Area of closet = (6 x 4.5) sq. ft = 27 sq. ft.

7. A towel, when bleached, was found to have lost 20% of its length and 10% of its breadth. The percentage of decrease in area is:

A. 10%   B. 10.08%

C. 20%   D. 28%

Answer & Explanation

Answer: Option **D**

Explanation:

Let original length = x and original breadth = y.

Decrease in area $= xy - \left(\frac{80}{100}x \times \frac{90}{100}y\right)$

$= \left(xy - \frac{18}{25}xy\right)$

$= \frac{7}{25}xy.$

∴ Decrease % $= \left(\frac{7}{25}xy \times \frac{1}{xy} \times 100\right)\% = 28\%.$

8. A man walked diagonally across a square lot. Approximately, what was the percent saved by not walking along the edges?

A. 20   B. 24

C. 30   D. 33

Answer & Explanation

Answer: Option **C**

Explanation:

Let the side of the square(ABCD) be x metres.
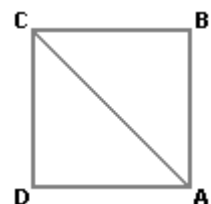
Then, AB + BC = $2x$ metres.

AC = $2x$ = (1.41x) m.

Saving on $2x$ metres = (0.59x) m.

$$\text{Saving \%} = \left(\frac{0.59x}{2x} \times 100\right)_{\%} = 30\% \text{ (approx.)}$$

---

9. The diagonal of a rectangle is 41 cm and its area is 20 sq. cm. The perimeter of the rectangle must be:

A. 9 cm   B. 18 cm

C. 20 cm   D. 41 cm

Answer & Explanation

Answer: Option **B**

Explanation:

$l^2 + b^2 = 41$.

Also, $lb = 20$.

$(l + b)^2 = (l^2 + b^2) + 2lb = 41 + 40 = 81$

$\Rightarrow (l + b) = 9$.

∴ Perimeter = $2(l + b)$ = 18 cm.

---

10. What is the least number of squares tiles required to pave the floor of a room 15 m 17 cm long and 9 m 2 cm broad?

A. 814   B. 820

C. 840   D. 844

Answer & Explanation

Answer: Option **A**

Explanation:

Length of largest tile = H.C.F. of 1517 cm and 902 cm = 41 cm.

Area of each tile = (41 x 41) cm^2.

∴ Required number of tiles = $\left(\dfrac{1517 \times 902}{41 \times 41}\right)$ = 814.

---

11. The difference between the length and breadth of a rectangle is 23 m. If its perimeter is 206 m, then its area is:

A. 1520 m^2 B. 2420 m^2

C. 2480 m^2 D. 2520 m^2

Answer & Explanation

Answer: Option **D**

Explanation:

We have: $(l - b) = 23$ and $2(l + b) = 206$ or $(l + b) = 103$.

Solving the two equations, we get: $l = 63$ and $b = 40$.

∴ Area = $(l \times b) = (63 \times 40)$ m^2 = 2520 m^2.

---

12. The length of a rectangle is halved, while its breadth is tripled. What is the percentage change in area?

A. 25% increase   B. 50% increase

C. 50% decrease   D. 75% decrease

Answer & Explanation

Answer: Option **B**

Explanation:

Let original length = x and original breadth = y.

Original area = xy.

New length = $\dfrac{x}{2}$.

New breadth = $3y$.

New area = $\left(\dfrac{x}{2} \times 3y\right) = \dfrac{3}{2}xy$.

∴ Increase % = $\left(\dfrac{1}{2}xy \times \dfrac{1}{xy} \times 100\right)_{\%}$ = 50%.

---

13. The length of a rectangular plot is 20 metres more than its breadth. If the cost of fencing the plot @ 26.50 per metre is Rs. 5300, what is the length of the plot in metres?

A. 40   B. 50

C. 120   D. Data inadequate

E. None of these

Answer: Option **E**

Explanation:

Let breadth = x metres.

Then, length = $(x + 20)$ metres.

Perimeter = $\left(\dfrac{5300}{26.50}\right)$ m = 200 m.

$\therefore 2[(x + 20) + x] = 200$

$\Rightarrow 2x + 20 = 100$

$\Rightarrow 2x = 80$

$\Rightarrow x = 40.$

Hence, length = $x + 20 = 60$ m.

---

14. A rectangular field is to be fenced on three sides leaving a side of 20 feet uncovered. If the area of the field is 680 sq. feet, how many feet of fencing will be required?
    A. 34   B. 40

    C. 68   D. 88

Answer: Option **D**

Explanation:

We have: $l = 20$ ft and $lb = 680$ sq. ft.

So, $b = 34$ ft.

$\therefore$ Length of fencing = $(l + 2b) = (20 + 68)$ ft = 88 ft.

---

15. A tank is 25 m long, 12 m wide and 6 m deep. The cost of plastering its walls and bottom at 75 paise per sq. m, is:
    A. Rs. 456   B. Rs. 458

    C. Rs. 558   D. Rs. 568

Answer: Option **C**

Explanation:

Area to be plastered = $[2(l + b) \times h] + (l \times b)$

$$= \{[2(25 + 12) \times 6] + (25 \times 12)\} \text{ m}^2$$

$$= (444 + 300) \text{ m}^2$$

$= 744 \text{ m}^2.$

$\therefore$ Cost of plastering = Rs. $\left(744 \times \dfrac{75}{100}\right)$ = Rs. 558.

19. Numbers

1. Which one of the following is not a prime number?
   A. 31   B. 61

   C. 71   D. 91

Answer: Option **D**

Explanation:

91 is divisible by 7. So, it is not a prime number.

---

2. $(112 \times 5^4) = ?$
   A. 67000   B. 70000

   C. 76500   D. 77200

Answer: Option **B**

Explanation:

$(112 \times 5^4) = 112 \times \left(\dfrac{10}{2}\right)^4 = \dfrac{112 \times 10^4}{2^4} = \dfrac{1120000}{16} = 70000$

---

3. It is being given that $(2^{32} + 1)$ is completely divisible by a whole number. Which of the following numbers is completely divisible by this number?
   A. $(2^{16} + 1)$ B. $(2^{16} - 1)$

   C. (7×2^{23}) D. $(2^{96} + 1)$

Answer: Option **D**

Explanation:

Let $2^{32} = x$. Then, $(2^{32} + 1) = (x + 1)$.

Let $(x + 1)$ be completely divisible by the natural number N. Then,

$(2^{96} + 1) = [(2^{32})^3 + 1] = (x^3 + 1) = (x + 1)(x^2 - x + 1)$, which is completely divisible by N, since $(x + 1)$ is divisible by N.

---

4. What least number must be added to 1056, so that the sum is completely divisible by 23 ?
A.2   B.3

C.18   D.21

E. None of these

Answer & Explanation

Answer: Option **A**

Explanation:

```
 23) 1056 (45
     92
     ---
     136
     115
     ---
      21
     ---
```

Required number = (23 - 21)
          = 2.

---

5. 1397 x 1397 = ?
A.1951609   B.1981709

C.18362619   D.2031719

E. None of these

Answer & Explanation

Answer: Option **A**

Explanation:

1397 x 1397 = $(1397)^2$

$= (1400 - 3)^2$

$= (1400)^2 + (3)^2 - (2 \times 1400 \times 3)$

$= 1960000 + 9 - 8400$

$= 1960009 - 8400$

$= 1951609.$

---

6. How many of the following numbers are divisible by 132 ?
264, 396, 462, 792, 968, 2178, 5184, 6336
A.4   B.5

C.6   D.7

Answer & Explanation

Answer: Option **A**

Explanation:

132 = 4 x 3 x 11

So, if the number divisible by all the three number 4, 3 and 11, then the number is divisible by 132 also.

264 →11,3,4 (/)

396 →11,3,4 (/)

462 →11,3 (X)

792 →11,3,4 (/)

968 →11,4 (X)

2178 →11,3 (X)

5184 →3,4 (X)

6336 →11,3,4 (/)

Therefore the following numbers are divisible by 132 : 264, 396, 792 and 6336.

Required number of number = 4.

---

7. (935421 x 625) = ?
A.575648125   B.584638125

C.584649125   D.585628125

Answer: Option **B**

Explanation:

$$935421 \times 625 = 935421 \times 5^4 = 935421 \times \left(\frac{10}{2}\right)^4$$

$$= \frac{935421 \times 10^4}{2^4} = \frac{9354210000}{16}$$

$$= 584638125$$

---

8. The largest 4 digit number exactly divisible by 88 is:
A.9944   B.9768

C.9988   D.8888

E. None of these

Answer: Option **A**

Explanation:

Largest 4-digit number = 9999

```
88) 9999 (113
    88
    ----
    1199
     88
    ----
     319
     264
     ---
      55
     ---
```

Required number = (9999 - 55)
         = 9944.

---

9. Which of the following is a prime number ?
A.33   B.81

C.93   D.97

Answer: Option **D**

Explanation:

Clearly, 97 is a prime number.

---

10. What is the unit digit in $\{(6374)^{1793} \times (625)^{317} \times (341^{491})\}$?
A.0   B.2

C.3   D.5

Answer: Option **A**

Explanation:

Unit digit in $(6374)^{1793}$ = Unit digit in $(4)^{1793}$

    = Unit digit in $[(4^2)^{896} \times 4]$

    = Unit digit in $(6 \times 4) = 4$

Unit digit in $(625)^{317}$ = Unit digit in $(5)^{317} = 5$

Unit digit in $(341)^{491}$ = Unit digit in $(1)^{491} = 1$

Required digit = Unit digit in $(4 \times 5 \times 1) = 0$.

11. 5358 x 51 = ?
A.273258   B.273268

C.273348   D.273358

Answer: Option **A**

Explanation:

5358 x 51 = 5358 x (50 + 1)

       = 5358 x 50 + 5358 x 1

       = 267900 + 5358

       = 273258.

---

12. The sum of first five prime numbers is:
A.11   B.18

C.26   D.28

Answer: Option **D**

Explanation:

Required sum = (2 + 3 + 5 + 7 + 11) = 28.

Note: 1 is not a prime number.

Definition: A prime number (or a prime) is a natural number that has exactly two distinct natural number divisors: 1 and itself.

---

13. The difference of two numbers is 1365. On dividing the larger number by the smaller, we get 6 as quotient and the 15 as remainder. What is the smaller number ?
    A.240   B.270

    C.295   D.360

Answer: Option **B**

Explanation:

Let the smaller number be x. Then larger number = $(x + 1365)$.

$\therefore$ $x + 1365 = 6x + 15$

$\Rightarrow 5x = 1350$

$\Rightarrow x = 270$

$\therefore$ Smaller number = 270.

---

14. $(12)^3$ x $6^4 \div 432 = ?$
    A.5184   B.5060

    C.5148   D.5084

    E.None of these

Answer: Option **A**

Explanation:

Given Exp. $= \dfrac{(12)^3 \text{ x } 6^4}{432} = \dfrac{(12)^3 \text{ x } 6^4}{12 \text{ x } 6^2} = (12)^2 \text{ x } 6^2 = (72)^2 = 5184$

---

15. 72519 x 9999 = ?
    A.725117481   B.674217481

    C.685126481   D.696217481

    E.None of these

Answer: Option **A**

Explanation:

72519 x 9999= 72519 x (10000 - 1)

       = 72519 x 10000 - 72519 x 1

       = 725190000 - 72519

       = 725117481.

---

16. If the number 517*324 is completely divisible by 3, then the smallest whole number in the place of * will be:
    A.0   B.1

    C.2   D.None of these

Answer: Option **C**

Explanation:

Sum of digits = $(5 + 1 + 7 + x + 3 + 2 + 4) = (22 + x)$, which must be divisible by 3.

$\therefore$ $x = 2$.

---

17. The smallest 3 digit prime number is:
    A.101   B.103

    C.109   D.113

Answer: Option **A**

Explanation:

The smallest 3-digit number is 100, which is divisible

by 2.

∴ 100 is not a prime number.

101 < 11 and 101 is not divisible by any of the prime numbers 2, 3, 5, 7, 11.

∴ 101 is a prime number.

Hence 101 is the smallest 3-digit prime number.

---

18. Which one of the following numbers is exactly divisible by 11?
A.235641   B.245642

C.315624   D.415624

Answer & Explanation

Answer: Option **D**

Explanation:

(4 + 5 + 2) - (1 + 6 + 3) = 1, not divisible by 11.

(2 + 6 + 4) - (4 + 5 + 2) = 1, not divisible by 11.

(4 + 6 + 1) - (2 + 5 + 3) = 1, not divisible by 11.

(4 + 6 + 1) - (2 + 5 + 4) = 0, So, 415624 is divisible by 11.

---

19. (?) - 19657 - 33994 = 9999
A.63650   B.53760

C.59640   D.61560

E.None of these

Answer & Explanation

Answer: Option **A**

Explanation:

```
 19657      Let x - 53651 = 9999
 33994      Then, x = 9999 + 53651 = 63650
 -----
 53651
 -----
```

---

20. The sum of first 45 natural numbers is:

A.1035   B.1280

C.2070   D.2140

Answer & Explanation

Answer: Option **A**

Explanation:

Let $S_n = (1 + 2 + 3 + ... + 45)$. This is an A.P. in which a =1, d =1, n = 45.

$$S_n = \frac{n}{2}[2a + (n-1)d] = \frac{45}{2} \times [2 \times 1 + (45-1) \times 1] = \left(\frac{45}{2} \times 46\right) = (45 \times 23)$$

= 45 x (20 + 3)

= 45 x 20 + 45 x 3

= 900 + 135

= 1035.

Shorcut Method:

$$S_n = \frac{n(n+1)}{2} = \frac{45(45+1)}{2} = 1035.$$

21. Which of the following number is divisible by 24 ?
A.35718   B.63810

C.537804   D.3125736

Answer & Explanation

Answer: Option **D**

Explanation:

24 = 3 x8, where 3 and 8 co-prime.

Clearly, 35718 is not divisible by 8, as 718 is not divisible by 8.

Similarly, 63810 is not divisible by 8 and 537804 is not divisible by 8.

Cibsuder oart (d).

Sum of digits = (3 + 1 + 2 + 5 + 7 + 3 + 6) = 27, which is divisible by 3.

Also, 736 is divisible by 8.

∴ 3125736 is divisible by (3 x 8), *i.e.,* 24.

---

22. $$\frac{753 \times 753 + 247 \times 247 - 753 \times 247}{753 \times 753 \times 753 + 247 \times 247 \times 247} = \ ?$$

A. $\dfrac{1}{1000}$

B. $\dfrac{1}{506}$

C. $\dfrac{253}{500}$

D. None of these

Answer & Explanation

Answer: Option **A**

Explanation:

Given Exp. $= \dfrac{(a^2 + b^2 - ab)}{(a^3 + b^3)} = \dfrac{1}{(a + b)} = \dfrac{1}{(753 + 247)} = \dfrac{1}{1000}$

---

23. (?) + 3699 + 1985 - 2047 = 31111

A. 34748　　　　　　　　　B. 27474

C. 30154　　　　　　　　　D. 27574

E. None of these

Answer & Explanation

Answer: Option **B**

Explanation:

x + 3699 + 1985 - 2047 = 31111

⟹ x + 3699 + 1985 = 31111 + 2047

⟹ x + 5684 = 33158

⟹ x = 33158 - 5684 = 27474.

---

24. If the number 481 * 673 is completely divisible by 9, then the smallest whole number in place of * will be:

A. 2　　　　　　　　　B. 5

C. 6　　　　　　　　　D. 7

E. None of these

Answer & Explanation

Answer: Option **D**

Explanation:

Sum of digits = (4 + 8 + 1 + x + 6 + 7 + 3) = (29 + x), which must be divisible by 9.

∴ $x = 7$.

---

25. The difference between the local value and the face value of 7 in the numeral 32675149 is

A. 75142　　　　　　　　　B. 64851

C. 5149　　　　　　　　　D. 69993

E. None of these

Answer & Explanation

Answer: Option **D**

Explanation:

(Local value of 7) - (Face value of 7) = (70000 - 7) = 69993

---

26. The difference between a positive proper fraction and its reciprocal is 9/20. The fraction is:

A. $\dfrac{3}{5}$　　　　　　　　　B. $\dfrac{3}{10}$

C. $\dfrac{4}{5}$　　　　　　　　　D. $\dfrac{4}{3}$

Answer & Explanation

Answer: Option **C**

Explanation:

Let the required fraction be x. Then $\dfrac{1}{x} - x = \dfrac{9}{20}$

∴ $\dfrac{1 - x^2}{x} = \dfrac{9}{20}$

$$\Rightarrow \quad 20 - 20x^2 = 9x$$

$$\Rightarrow \quad 20x^2 + 9x - 20 = 0$$

$$\Rightarrow \quad 20x^2 + 25x - 16x - 20 = 0$$

$$\Rightarrow \quad 5x(4x + 5) - 4(4x + 5) = 0$$

$$\Rightarrow \quad (4x + 5)(5x - 4) = 0$$

$$x = \frac{4}{5}$$

27. On dividing a number by 56, we get 29 as remainder. On dividing the same number by 8, what will be the remainder ?

A.4 B.5

C.6 D.7

Answer & Explanation

Answer: Option **B**

Explanation:

No answer description available for this question. **Let us discuss**.

28. If n is a natural number, then $(6n^2 + 6n)$ is always divisible by:

A.6 only B.6 and 12 both

C.12 only D.by 18 only

Answer & Explanation

Answer: Option **B**

Explanation:

$(6n^2 + 6n) = 6n(n + 1)$, which is always divisible by 6 and 12 both, since $n(n + 1)$ is always even.

29. 107 x 107 + 93 x 93 = ?

A.19578 B.19418

C.20098 D.21908

E.None of these

Answer & Explanation

Answer: Option **C**

Explanation:

$$107 \times 107 + 93 \times 93 = (107)^2 + (93)^2$$

$$= (100 + 7)^2 + (100 - 7)^2$$

$$= 2 \times [(100)^2 + 7^2] \quad [\textbf{Ref:} \ (a + b)^2 + (a - b)^2 = 2(a^2 + b^2)]$$

$$= 20098$$

30. What will be remainder when $(67^{67} + 67)$ is divided by 68 ?

A.1 B.63

C.66 D.67

Answer & Explanation

Answer: Option **C**

Explanation:

$(x^n + 1)$ will be divisible by $(x + 1)$ only when n is odd.

$\therefore$ $(67^{67} + 1)$ will be divisible by $(67 + 1)$

$\therefore$ $(67^{67} + 1) + 66$, when divided by 68 will give 66 as remainder.

31. On dividing a number by 5, we get 3 as remainder. What will the remainder when the square of the this number is divided by 5 ?

A.0 B.1

C.2 D.4

Answer & Explanation

Answer: Option **D**

Explanation:

Let the number be x and on dividing x by 5, we get k as quotient and 3 as remainder.

$\therefore \quad x = 5k + 3$

$\Rightarrow \quad x^2 = (5k + 3)^2$

$$= (25k^2 + 30k + 9)$$

$$= 5(5k^2 + 6k + 1) + 4$$

$\therefore$ On dividing x^2 by 5, we get 4 as remainder.

---

32. How many 3-digit numbers are completely divisible 6 ?
    A. 149   B. 150

    C. 151   D. 166

    Answer & Explanation

    Answer: Option **B**

    Explanation:

    3-digit number divisible by 6 are: 102, 108, 114,... , 996

    This is an A.P. in which $a = 102$, $d = 6$ and $l = 996$

    Let the number of terms be n. Then $t_n = 996$.

    $\therefore a + (n - 1)d = 996$

    $\Rightarrow 102 + (n - 1) \times 6 = 996$

    $\Rightarrow 6 \times (n - 1) = 894$

    $\Rightarrow (n - 1) = 149$

    $\Rightarrow n = 150$

    $\therefore$ Number of terms = 150.

---

33. How many natural numbers are there between 23 and 100 which are exactly divisible by 6 ?
    A. 8   B. 11

    C. 12   D. 13

    E. None of these

    Answer & Explanation

    Answer: Option **D**

    Explanation:

    Required numbers are 24, 30, 36, 42, ..., 96

    This is an A.P. in which $a = 24$, $d = 6$ and $l = 96$

Let the number of terms in it be n.

Then $t_n = 96 \implies a + (n - 1)d = 96$

$\Rightarrow 24 + (n - 1) \times 6 = 96$

$\Rightarrow (n - 1) \times 6 = 72$

$\Rightarrow (n - 1) = 12$

$\Rightarrow n = 13$

Required number of numbers = 13.

---

34. How many of the following numbers are divisible by 3 but not by 9 ?
    2133, 2343, 3474, 4131, 5286, 5340, 6336, 7347, 8115, 9276
    A. 5   B. 6

    C. 7   D. None of these

    Answer & Explanation

    Answer: Option **B**

    Explanation:

    Marking (/) those which are are divisible by 3 by not by 9 and the others by (X), by taking the sum of digits, we get:s

    2133 $\to$ 9 (X)

    2343 $\to$ 12 (/)

    3474 $\to$ 18 (X)

    4131 $\to$ 9 (X)

    5286 $\to$ 21 (/)

    5340 $\to$ 12 (/)

    6336 $\to$ 18 (X)

    7347 $\to$ 21 (/)

    8115 $\to$ 15 (/)

    9276 $\to$ 24 (/)

    Required number of numbers = 6.

35. $\dfrac{(963 + 476)^2 + (963 - 476)^2}{(963 \times 963 + 476 \times 476)}$ = ?

A. 1449   B. 497

C. 2   D. 4

E. None of these

Answer & Explanation

Answer: Option **C**

Explanation:

Given Exp. = $\dfrac{(a + b)^2 + (a - b)^2}{(a^2 + b^2)} = \dfrac{2(a^2 + b^2)}{(a^2 + b^2)} = 2$

---

36. How many 3 digit numbers are divisible by 6 in all ?

A. 149   B. 150

C. 151   D. 166

Answer & Explanation

Answer: Option **B**

Explanation:

Required numbers are 102, 108, 114, ... , 996

This is an A.P. in which $a = 102$, $d = 6$ and $l = 996$

Let the number of terms be n. Then,

$a + (n - 1)d = 996$

$\Rightarrow 102 + (n - 1) \times 6 = 996$

$\Rightarrow 6 \times (n - 1) = 894$

$\Rightarrow (n - 1) = 149$

$\Rightarrow n = 150.$

---

37. A 3-digit number 4a3 is added to another 3-digit number 984 to give a 4-digit number 13b7, which is divisible by 11. Then, $(a + b)$ = ?

A. 10   B. 11

C. 12   D. 15

Answer & Explanation

Answer: Option **A**

Explanation:

$\begin{array}{l} 4\,a\,3\ | \\ 9\,8\,4\ \} \\ 13\,b\,7\ | \end{array}$ ==> $a + 8 = b$ ==> $b - a = 8$

Also, 13b7 is divisible by 11 $\Rightarrow$ (7 + 3) - (b + 1) = (9 - b)

$\Rightarrow$ (9 - b) = 0

$\Rightarrow b = 9$

$\therefore$ (b = 9 and a = 1) $\Rightarrow (a + b) = 10.$

---

38. 8597 - ? = 7429 - 4358

A. 5426   B. 5706

C. 5526   D. 5476

E. None of these

Answer & Explanation

Answer: Option **C**

Explanation:

$\begin{array}{l} 7429 \\ -4358 \\ ---- \\ 3071 \\ ---- \end{array}$ Let 8597 - x = 3071
Then,   x = 8597 - 3071
              = 5526

---

39. The smallest prime number is:

A. 1   B. 2

C. 3   D. 4

Answer & Explanation

Answer: Option **B**

Explanation:

The smallest prime number is 2.

---

40. (12345679 x 72) = ?

A.88888888	B.888888888
C.898989898	D.9999999998

Answer & Explanation

Answer: Option **B**

Explanation:

12345679 x 72= 12345679 x (70 +2)

= 12345679 x 70 + 12345679 x 2

= 864197530 + 24691358

= 888888888

41. On dividing a number by 357, we get 39 as remainder. On dividing the same number 17, what will be the remainder ?

A.0	B.3
C.5	D.11

Answer & Explanation

Answer: Option **C**

Explanation:

Let x be the number and y be the quotient. Then,

$x = 357$ x $y + 39$

$= (17$ x 21 x $y) + (17$ x $2) + 5$

$= 17$ x $(21y + 2) + 5)$

∴ Required remainder = 5.

42. If the product 4864 x 9 P 2 is divisible by 12, then the value of P is:

A.2	B.5
C.6	D.8

E. None of these

Answer & Explanation

Answer: Option **E**

Explanation:

Clearly, 4864 is divisible by 4.

So, 9P2 must be divisible by 3. So, (9 + P + 2) must be divisible by 3.

∴ P = 1.

43. Which one of the following is the common factor of $(47^{43} + 43^{43})$ and $(47^{47} + 43^{47})$?

A.(47 - 43)	B.(47 + 43)
C.$(47^{43} + 43^{43})$	D.None of these

Answer & Explanation

Answer: Option **B**

Explanation:

When n is odd, $(x^n + a^n)$ is always divisible by $(x + a)$.

∴ Each one of $(47^{43} + 43^{43})$ and $(47^{47} + 43^{47})$ is divisible by $(47 + 43)$.

44. -84 x 29 + 365 = ?

A.2436	B.2801
C.-2801	D.-2071

E. None of these

Answer & Explanation

Answer: Option **D**

Explanation:

Given Exp.= -84 x (30 - 1) + 365

= -(84 x 30) + 84 + 365

= -2520 + 449

= -2071

45. A number when divided by 296 leaves 75 as remainder.

When the same number is divided by 37, the remainder will be:

A. 1   B. 2

C. 8   D. 11

Answer & Explanation

Answer: Option **A**

Explanation:

Let $x = 296q + 75$

$\quad = (37 \times 8q + 37 \times 2) + 1$

$\quad = 37(8q + 2) + 1$

Thus, when the number is divided by 37, the remainder is 1.

---

46. In dividing a number by 585, a student employed the method of short division. He divided the number successively by 5, 9 and 13 (factors 585) and got the remainders 4, 8, 12 respectively. If he had divided the number by 585, the remainder would have been

A. 24   B. 144

C. 292   D. 584

Answer & Explanation

Answer: Option **D**

Explanation:

```
5 | x            z = 13 x 1 + 12 = 25
-------------
9 | y - 4        y = 9 x z + 8 = 9 x 25 + 8 = 233
-------------
13| z - 8        x = 5 x y + 4 = 5 x 233 + 4 = 1169
-------------
 | 1 -12

585) 1169 (1
     585
     ---
     584
     ---
```

Therefore, on dividing the number by 585, remainder = 584.

---

47. In a division sum, the divisor is 10 times the quotient and 5 times the remainder. If the remainder is 46, what

is the dividend ?

A. 4236   B. 4306

C. 4336   D. 5336

E. None of these

Answer & Explanation

Answer: Option **D**

Explanation:

Divisor = $(5 \times 46) = 230$

$\therefore 10 \times \text{Quotient} = 230 \implies = \dfrac{230}{10} = 23$

Dividend = (Divisor x Quotient) + Remainder

$\quad = (230 \times 23) + 46$

$\quad = 5290 + 46$

$\quad = 5336.$

---

48. $4500 \times ? = 3375$

A. $\dfrac{2}{5}$ B. $\dfrac{3}{4}$

C. $\dfrac{1}{4}$ D. $\dfrac{3}{5}$

E. None of these

Answer & Explanation

Answer: Option **B**

Explanation:

$4500 \times x = 3375 \implies x = \dfrac{\cancel{3375}^{75}}{\cancel{4500}_{100}} = \dfrac{3}{4}$

---

49. What smallest number should be added to 4456 so that the sum is completely divisible by 6 ?

A. 4   B. 3

C.2   D.1

E. None of these

Answer & Explanation

Answer: Option **C**

Explanation:

```
6) 4456 (742
   42
   ---
   25
   24        Therefore, Required number = (6 - 4) = 2.
   ---
   16
   12
   ---
    4
```

---

50. What least number must be subtracted from 13601, so that the remainder is divisible by 87 ?
A.23   B.31

C.29   D.37

E.49

Answer & Explanation

Answer: Option **C**

Explanation:

```
87) 13601 (156
    87
    ----
    490
    435
    ----
    551
    522
    ---
     29
    ---
```

Therefore, the required number = 29.

51. 476 ** 0 is divisible by both 3 and 11. The non-zero digits in the hundred's and ten's places are respectively:
A.7 and 4   B.7 and 5

C.8 and 5   D.None of these

Answer & Explanation

Answer: Option **C**

Explanation:

Let the given number be 476 xy 0.

Then $(4 + 7 + 6 + x + y + 0) = (17 + x + y)$ must be divisible by 3.

And, $(0 + x + 7) - (y + 6 + 4) = (x - y - 3)$ must be either 0 or 11.

$x - y - 3 = 0 \implies y = x - 3$

$(17 + x + y) = (17 + x + x - 3) = (2x + 14)$

$\implies x = 2$ or $x = 8$.

$\therefore x = 8$ and $y = 5$.

---

52. If the number 97215 * 6 is completely divisible by 11, then the smallest whole number in place of * will be:
A.3   B.2

C.1   D.5

E. None of these

Answer & Explanation

Answer: Option **A**

Explanation:

Given number = 97215x6

$(6 + 5 + 2 + 9) - (x + 1 + 7) = (14 - x)$, which must be divisible by 11.

$\therefore x = 3$

---

53. $(11^2 + 12^2 + 13^2 + ... + 20^2) = ?$
A.385   B.2485

C.2870   D.3255

Answer & Explanation

Answer: Option **B**

Explanation:

$(11^2 + 12^2 + 13^2 + ... + 20^2) = (1^2 + 2^2 + 3^2 + ... + 20^2) - (1^2 + 2^2 + 3^2 + ... + 10^2)$

$$\left[\textbf{Ref:} \ (1^2 + 2^2 + 3^2 + ... + n^2) = \frac{1}{6} n(n + 1)(2n + 1) \right]$$

$$= \left(\frac{20 \times 21 \times 41}{6} - \frac{10 \times 11 \times 21}{6} \right)$$

$$= (2870 - 385)$$

$$= 2485.$$

---

54. If the number 5 * 2 is divisible by 6, then * = ?
   A. 2   B. 3

   C. 6   D. 7

   Answer & Explanation

   Answer: Option **A**

   Explanation:

   $6 = 3 \times 2$. Clearly, 5 * 2 is divisible by 2. Replace * by x.

   Then, $(5 + x + 2)$ must be divisible by 3. So, $x = 2$.

---

55. Which of the following numbers will completely divide $(49^{15} - 1)$?
   A. 8   B. 14

   C. 46   D. 50

   Answer & Explanation

   Answer: Option **A**

   Explanation:

   $(x^n - 1)$ will be divisibly by $(x + 1)$ only when n is even.

   $(49^{15} - 1) = \{(7^2)^{15} - 1\} = (7^{30} - 1)$, which is divisible by $(7 + 1)$, *i.e.*, 8.

---

56. $9 + \frac{3}{4} + 7 + \frac{2}{17} - \left(9 + \frac{1}{15} \right) = ?$

   A. $7 + \dfrac{719}{1020}$ B. $9 + \dfrac{817}{1020}$

   C. $9 + \dfrac{719}{1020}$ D. $7 + \dfrac{817}{1020}$

   E. None of these

   Answer & Explanation

   Answer: Option **D**

   Explanation:

   Given sum $= 9 \dfrac{3}{4} + 7 \dfrac{2}{17} - \left(9 \dfrac{1}{15} \right)$

   $$= (9 + 7 - 9) + \left(\frac{3}{4} + \frac{2}{17} - \frac{1}{15} \right)$$

   $$= 7 + \frac{765 + 120 - 68}{1020}$$

   $$= 7 + \frac{817}{1020}$$

---

57. $\left(1 - \dfrac{1}{n} \right) + \left(1 - \dfrac{2}{n} \right) + \left(1 - \dfrac{3}{n} \right) + ...$ up to n terms = ?

   A. $\dfrac{1}{2} n$ B. $\dfrac{1}{2} (n - 1)$

   C. $\dfrac{1}{2} n(n - 1)$ D. None of these

   Answer & Explanation

   Answer: Option **B**

   Explanation:

   Given sum $= (1 + 1 + 1 + ...$ to n terms$) - \left(\dfrac{1}{n} + \dfrac{2}{n} + \dfrac{3}{n} + ...$ to n terms $\right)$

   $$= n - \frac{n}{2} \left(\frac{1}{n} + 1 \right) \quad [\textbf{Ref}: n\text{th terms} = (n/n) = 1]$$

   $$= n - n + 1$$

$$= \frac{1}{2}(n - 1)$$

at top left, shows:
2
1
$= (n - 1)$
2

---

58. On dividing 2272 as well as 875 by 3-digit number N, we get the same remainder. The sum of the digits of N is:

A.10   B.11

C.12   D.13

Answer & Explanation

Answer: Option **A**

Explanation:

Clearly, (2272 - 875) = 1397, is exactly divisible by N.

Now, 1397 = 11 x 127

∵ The required 3-digit number is 127, the sum of whose digits is 10.

---

59. A boy multiplied 987 by a certain number and obtained 559981 as his answer. If in the answer both 9 are wrong and the other digits are correct, then the correct answer would be:

A.553681   B.555181

C.555681   D.556581

Answer & Explanation

Answer: Option **C**

Explanation:

987 = 3 x 7 x 47

So, the required number must be divisible by each one of 3, 7, 47

553681 →(Sum of digits = 28, not divisible by 3)

555181 →(Sum of digits = 25, not divisible by 3)

555681 is divisible by 3, 7, 47.

---

60. How many prime numbers are less than 50 ?

A.16   B.15

C.14   D.18

Answer & Explanation

Answer: Option **B**

Explanation:

Prime numbers less than 50 are:
2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47

Their number is 15

61. When a number is divided by 13, the remainder is 11. When the same number is divided by 17, then remainder is 9. What is the number ?

A.339   B.349

C.369   D.Data inadequate

Answer & Explanation

Answer: Option **B**

Explanation:

$x = 13p + 11$ and $x = 17q + 9$

∴ $13p + 11 = 17q + 9$

⟹$17q - 13p = 2$

⟹$q = \dfrac{2 + 13p}{17}$

The least value of p for which $q = \dfrac{2 + 13p}{17}$ is a whole number is $p = 26$

∴ $x = (13 \times 26 + 11)$

$= (338 + 11)$

$= 349$

---

62. (51 + 52 + 53 + ... + 100) = ?

A.2525   B.2975

C.3225   D.3775

Answer & Explanation

Answer: Option **D**

Explanation:

$S_n = (1 + 2 + 3 + ... + 50 + 51 + 52 + ... + 100) - (1 + 2 + 3 + ... + 50)$

$$= \frac{100}{2} \times (1 + 100) - \frac{50}{2} \times (1 + 50)$$

$= (50 \times 101) - (25 \times 51)$

$= (5050 - 1275)$

$= 3775.$

---

63. $(800 \div 64) \times (1296 \div 36) = ?$
   A. 420   B. 460

   C. 500   D. 540

   E. None of these

   Answer & Explanation

   Answer: Option **E**

   Explanation:

   $$\text{Given Exp.} = \frac{800}{64} \times \frac{1296}{36} = 450$$

---

64. Which natural number is nearest to 8485, which is completely divisible by 75 ?
   A. 8475   B. 8500

   C. 8550   D. 8525

   E. None of these

   Answer & Explanation

   Answer: Option **A**

   Explanation:

   On dividing, we get

   75) 8485 (113
      75

     98
     75

     235
     225

     10

   Required number = (8485 - 10) // Because 10 < (75 - 10)

         = 8475.

---

65. If the number 42573 * is exactly divisible by 72, then the minimum value of * is:
   A. 4   B. 5

   C. 6   D. 7

   E. 8

   Answer & Explanation

   Answer: Option **C**

   Explanation:

   $72 = 9 \times 8$, where 9 and 8 are co-prime.

   The minimum value of x for which $73x$ for which $73x$ is divisible by 8 is, $x = 6$.

   Sum of digits in 425736 = (4 + 2 + 5 + 7 + 3 + 6) = 27, which is divisible by 9.

   $\therefore$ Required value of * is 6.

---

66. Which of the following numbers is divisible by each one of 3, 7, 9 and 11 ?
   A. 639   B. 2079

   C. 3791   D. 37911

   E. None of these

   Answer & Explanation

   Answer: Option **B**

   Explanation:

   639 is not divisible by 7

   2079 is divisible by each of 3, 7, 9, 11.

67. Which natural number is nearest to 9217, which is completely divisible by 88 ?

A. 9152 B. 9240

C. 9064 D. 9184

E. None of these

Answer & Explanation

Answer: Option **B**

Explanation:

On dividing we get,

```
88) 9217 (104
    88
    ----
    417
    352
    ----
     65
    ----
```

Therefore, Required number = 9217 + (88 - 65) //
Because (88 - 65) < 65.
                = 9217 + 23
                = 9240.

68. (4300731) - ? = 2535618

A. 1865113 B. 1775123

C. 1765113 D. 1675123

E. None of these

Answer & Explanation

Answer: Option **C**

Explanation:

Let 4300731 - x = 2535618

Then x, = 4300731 - 2535618 = 1765113

69. n is a whole number which when divided by 4 gives 3 as remainder. What will be the remainder when 2n is divided by 4 ?

A. 3 B. 2

C. 1 D. 0

Answer & Explanation

Answer: Option **B**

Explanation:

Let $n = 4q + 3$. Then $2n = 8q + 6 = 4(2q + 1) + 2$.

Thus, when 2n is divided by 4, the remainder is 2.

70. $\dfrac{(489 + 375)^2 - (489 - 375)^2}{(489 \times 375)} = ?$

A. 144 B. 864

C. 2 D. 4

E. None of thess

Answer & Explanation

Answer: Option **D**

Explanation:

Given Exp. = $\dfrac{(a + b)^2 - (a - b)^2}{ab} = \dfrac{4ab}{ab} = 4$

71. 397 x 397 + 104 x 104 + 2 x 397 x 104 = ?

A. 250001 B. 251001

C. 260101 D. 261001

Answer & Explanation

Answer: Option **B**

Explanation:

Given Exp. = $(397)^2 + (104)^2 + 2 \times 397 \times 104$

$= (397 + 104)^2$

$= (501)^2 = (500 + 1)^2$

$= (500^2) + (1)^2 + (2 \times 500 \times 1)$

$= 250000 + 1 + 1000$

$= 251001$

72. (35423 + 7164 + 41720) - (317 x 89) = ?
   A. 28213   B. 84307

   C. 50694   D. 56094

   E. None of these

   Answer & Explanation

   Answer: Option **D**

   Explanation:

   ```
    35423        317 x 89 = 317 x (90 -1 )
   +  7164                = (317 x 90 - 317)
   + 41720                = (28530 - 317)
   -----                  = 28213
    84307
   - 28213
    -----
    56094
    -----
   ```

73. $(x^n - a^n)$ is completely divisible by $(x - a)$, when

   A. n is any natural number   B. n is an even natural number

   C. n is and odd natural number   D. n is prime

   Answer & Explanation

   Answer: Option **A**

   Explanation:

   For every natural number n, $(x^n - a^n)$ is completely divisible by $(x - a)$.

74. Which one of the following numbers is completely divisible by 45?
   A. 181560   B. 331145

   C. 202860   D. 2033555

   E. None of these

   Answer & Explanation

   Answer: Option **C**

   Explanation:

45 = 5 x 9, where 5 and 9 are co-primes.

Unit digit must be 0 or 5 and sum of digits must be divisible by 9.

Among given numbers, such number is 202860.

75. Which of the following numbers will completely divide $(3^{25} + 3^{26} + 3^{27} + 3^{28})$?
   A. 11   B. 16

   C. 25   D. 30

   Answer & Explanation

   Answer: Option **D**

   Explanation:

   $(3^{25} + 3^{26} + 3^{27} + 3^{28}) = 3^{25}$ x $(1 + 3 + 3^2 + 3^3) = 3^{25}$ x 40

   $= 3^{24}$ x 3 x 4 x 10

   $= (3^{24}$ x 4 x 30), which is divisible by 30.

76. A number when divide by 6 leaves a remainder 3. When the square of the number is divided by 6, the remainder is:
   A. 0   B. 1

   C. 2   D. 3

   Answer & Explanation

   Answer: Option **D**

   Explanation:

   Let $x = 6q + 3$.

   Then, $x^2 = (6q + 3)^2$

   $= 36q^2 + 36q + 9$

   $= 6(6q^2 + 6q + 1) + 3$

   Thus, when x^2 is divided by 6, then remainder = 3.

77. The sum of the two numbers is 12 and their product is 35. What is the sum of the reciprocals of these numbers ?
   A. 12   B. 1

35   35

  35   7
C.   D.
  8   32

Answer: Option **A**

Explanation:

Let the numbers be a and b. Then, $a + b = 12$ and $ab = 35$.

$$\therefore \quad \frac{a+b}{ab} = \frac{12}{35} \quad \Rightarrow \quad \left(\frac{1}{b} + \frac{1}{a}\right) = \frac{12}{35}$$

$\therefore$ Sum of reciprocals of given numbers $= \dfrac{12}{35}$

---

78. What will be remainder when 17^{200} is divided by 18 ?
    A. 17   B. 16

    C. 1   D. 2

Answer: Option **C**

Explanation:

When n is even. $(x^n - a^n)$ is completely divisibly by $(x + a)$

$(17^{200} - 1^{200})$ is completely divisible by $(17 + 1)$, *i.e.,* 18.

$\Rightarrow$ $(17^{200} - 1)$ is completely divisible by 18.

$\Rightarrow$ On dividing 17^{200} by 18, we get 1 as remainder.

---

79. If 1400 x $x = 1050$. Then, $x = $?

    A. $\dfrac{1}{4}$ B. $\dfrac{3}{5}$

    C. $\dfrac{2}{3}$ D. $\dfrac{3}{4}$

    E. None of these

Answer: Option **D**

Explanation:

1400 x $x = 1050$ $\Rightarrow$ $x = \dfrac{1050}{1400} = \dfrac{3}{4}$

---

80. $(1^2 + 2^2 + 3^2 + ... + 10^2) = $?
    A. 330   B. 345

    C. 365   D. 385

Answer: Option **D**

Explanation:

We know that $(1^2 + 2^2 + 3^2 + ... + n^2) = \dfrac{1}{6} n(n + 1)(2n + 1)$

Putting $n = 10$, required sum $= \left(\dfrac{1}{6} \times 10 \times 11 \times 21\right) = 385$

81. The difference of the squares of two consecutive even integers is divisible by which of the following integers ?
    A. 3   B. 4

    C. 6   D. 7

Answer: Option **B**

Explanation:

Let the two consecutive even integers be $2n$ and $(2n + 2)$. Then,

$(2n + 2)^2 = (2n + 2 + 2n)(2n + 2 - 2n)$

  $= 2(4n + 2)$

  $= 4(2n + 1)$, which is divisible by 4.

---

82. Which one of the following is a prime number ?
    A. 119   B. 187

C.247   D.551

E. None of these

Answer & Explanation

Answer: Option **E**

Explanation:

551 > 22

All prime numbers less than 24 are : 2, 3, 5, 7, 11, 13, 17, 19, 23.

119 is divisible by 7; 187 is divisible by 11; 247 is divisible by 13 and 551 is divisible by 19.

So, none of the given numbers is prime.

---

83. The sum all even natural numbers between 1 and 31 is:
   A.16   B.128

   C.240   D.512

Answer & Explanation

Answer: Option **C**

Explanation:

Required sum = (2 + 4 + 6 + ... + 30)

This is an A.P. in which $a = 2$, $d = (4 - 2) = 2$ and $l = 30$.

Let the number of terms be n. Then,

$t_n = 30 \Rightarrow a + (n - 1)d = 30$

$\Rightarrow 2 + (n - 1) \times 2 = 30$

$\Rightarrow n - 1 = 14$

$\Rightarrow n = 15$

$\therefore S_n = \dfrac{n}{2}(a + l) = \dfrac{15}{2} \times (2 + 30) = 240.$

---

84. The difference between the place value and the face value of 6 in the numeral 856973 is
   A.973   B.6973

   C.5994   D.None of these

Answer & Explanation

Answer: Option **C**

Explanation:

(Place value of 6) - (Face value of 6) = (6000 - 6) = 5994

85. If a and b are odd numbers, then which of the following is even ?
   A. $a + b$ B. $a + b + 1$

   C. ab D. $ab + 2$

   E. None of these

Answer & Explanation

Answer: Option **A**

Explanation:

The sum of two odd number is even. So, a + b is even.

---

86. Which one of the following numbers is completely divisible by 99?
   A.3572404   B.135792

   C.913464   D.114345

   E. None of these

Answer & Explanation

Answer: Option **D**

Explanation:

99 = 11 x 9, where 11 and 9 are co-prime.

By hit and trial, we find that 114345 is divisibleby 11 as well as 9. So, it is divisible by 99.

---

87. The sum of how many terms of the series 6 + 12 + 18 + 24 + ... is 1800 ?
   A.16   B.24

C.20   D.18

E. 22

Answer & Explanation

Answer: Option **B**

Explanation:

This is an A.P. in which $a = 6$, $d = 6$ and $S_n = 1800$

Then, $\dfrac{n}{2}[2a + (n - 1)d] = 1800$

$\Rightarrow \dfrac{n}{2}[2 \times 6 + (n - 1) \times 6] = 1800$

$\Rightarrow 3n\,(n + 1) = 1800$

$\Rightarrow n(n + 1) = 600$

$\Rightarrow n^2 + n - 600 = 0$

$\Rightarrow n^2 + 25n - 24n - 600 = 0$

$\Rightarrow n(n + 25) - 24(n + 25) = 0$

$\Rightarrow (n + 25)(n - 24) = 0$

$\Rightarrow n = 24$

Number of terms = 24.

---

88. $(51 + 52 + 53 + ... + 100) = ?$
    A. 2525   B. 2975

C. 3225   D. 3775

Answer & Explanation

Answer: Option **D**

Explanation:

This is an A.P. in which $a = 51$, $l = 100$ and $n = 50$.

$\therefore$ Sum $= \dfrac{n}{2}(a + l) = \dfrac{50}{2} \times (51 + 100) = (25 \times 151) = 3775.$

---

89. 1904 x 1904 = ?
    A. 3654316   B. 3632646

C. 3625216   D. 3623436

E. None of these

Answer & Explanation

Answer: Option **C**

Explanation:

$1904 \times 1904 = (1904)^2$

$\qquad = (1900 + 4)^2$

$\qquad = (1900)^2 + (4)^2 + (2 \times 1900 \times 4)$

$\qquad = 3610000 + 16 + 15200.$

$\qquad = 3625216.$

---

90. What is the unit digit in $(7^{95} - 3^{58})$?
    A. 0   B. 4

C. 6   D. 7

Answer & Explanation

Answer: Option **B**

Explanation:

Unit digit in 7^{95} = Unit digit in $[(7^4)^{23} \times 7^3]$
= Unit digit in $[($Unit digit in$(2401))^{23} \times (343)]$
= Unit digit in $(1^{23} \times 343)$
= Unit digit in (343)
= 3

Unit digit in 3^{58} = Unit digit in $[(3^4)^{14} \times 3^2]$
= Unit digit in $[$Unit digit in $(81)^{14} \times 3^2]$
= Unit digit in $[(1)^{14} \times 3^2]$
= Unit digit in (1×9)
= Unit digit in (9)
= 9

Unit digit in $(7^{95} - 3^{58})$ = Unit digit in $(343 - 9)$ = Unit digit in $(334) = 4.$

So, Option B is the answer.

91. Which one of the following is a prime number ?
    A. 161   B. 221

C.373　　　　　　　　　　D.437

E.None of these

Answer & Explanation

Answer: Option **C**

Explanation:

437 > 22

All prime numbers less than 22 are : 2, 3, 5, 7, 11, 13, 17, 19.

161 is divisible by 7, and 221 is divisible by 13.

373 is not divisible by any of the above prime numbers.

∴ 373 is prime.

---

92. The smallest 6 digit number exactly divisible by 111 is:
　　A.111111　　　　　　　B.110011

　　C.100011　　　　　　　D.110101

　　E.None of these

Answer & Explanation

Answer: Option **C**

Explanation:

The smallest 6-digit number 100000.

```
111) 100000 (900
     999
     -----
      100
      ---
```

Required number = 100000 + (111 - 100)
　　　　　　　 = 100011.

---

93. The largest 5 digit number exactly divisible by 91 is:
　　A.99921　　　　　　　B.99918

　　C.99981　　　　　　　D.99971

　　E.None of these

Answer & Explanation

Answer: Option **B**

Explanation:

Largest 5-digit number = 99999

```
91) 99999 (1098
    91
    ---
    899
    819
    ----
     809
     728
     ---
      81
     ---
```

Required number = (99999 - 81)
　　　　　　　 = 99918.

---

94. $\dfrac{768 \times 768 \times 768 + 232 \times 232 \times 232}{768 \times 768 - 768 \times 232 + 232 \times 232} = ?$

A.1000　　　　　　　　　B.536

C.500　　　　　　　　　　D.268

E.None of these

Answer & Explanation

Answer: Option **A**

Explanation:

Given Exp. $= \dfrac{(a^3 + b^3)}{(a^2 - ab + b^2)} = (a + b) = (768 + 232) = 1000$

---

95. The smallest 5 digit number exactly divisible by 41 is:
　　A.1004　　　　　　　　B.10004

　　C.10045　　　　　　　D.10025

　　E.None of these

Answer & Explanation

Answer: Option **B**

Explanation:

The smallest 5-digit number = 10000.

41) 10000 (243
   82

   180
   164

   160
   123

   37

Required number = 10000 + (41 - 37)
= 10004.

---

96. How many terms are there in the G.P. 3, 6, 12, 24, ... , 384 ?

A. 8   B. 9

C. 10   D. 11

E. 7

Answer & Explanation

Answer: Option **A**

Explanation:

Here $a = 3$ and $r = \dfrac{6}{3} = 2$. Let the number of terms be n.

Then, $t_n = 384 \implies ar^{n-1} = 384$

$\implies 3 \times 2^{n-1} = 384$

$\implies 2^{n-1} = 128 = 2^7$

$\implies n - 1 = 7$

$\implies n = 8$

$\therefore$ Number of terms = 8.

---

97. If x and y are positive integers such that $(3x + 7y)$ is a multiple of 11, then which of the following will be divisible by 11 ?

A. $4x + 6y$ B. $x + y + 4$

C. $9x + 4y$ D. $4x - 9y$

Answer & Explanation

Answer: Option **D**

Explanation:

By hit and trial, we put $x = 5$ and $y = 1$ so that $(3x + 7y)$ = (3 x 5 + 7 x 1) = 22, which is divisible by 11.

$\therefore$ $(4x + 6y)$ = (4 x 5 + 6 x 1) = 26, which is not divisible by 11;

$(x + y + 4)$ = (5 + 1 + 4) = 10, which is not divisible by 11;

$(9x + 4y)$ = (9 x 5 + 4 x 1) = 49, which is not divisible by 11;

$(4x - 9y)$ = (4 x 5 - 9 x 1) = 11, which is divisible by 11.

---

98. 9548 + 7314 = 8362 + (?)

A. 8230   B. 8410

C. 8500   D. 8600

E. None of these

Answer & Explanation

Answer: Option **C**

Explanation:

  9548 $16862 = 8362 + x$
+ 7314 $x = 16862 - 8362$
----- $= 8500$
16862

---

99. In a division sum, the remainder is 0. As student mistook the divisor by 12 instead of 21 and obtained 35 as quotient. What is the correct quotient ?

A. 0   B. 12

C. 13   D. 20

Answer & Explanation

Answer: Option **D**

Explanation:

Number = (12 x 35)

Correct Quotient = 420 ÷ 21 = 20

---

100. $2 + 2^2 + 2^3 + ... + 2^9 = ?$

A.2044   B.1022

C.1056   D.None of these

Answer: Option **B**

Explanation:

This is a G.P. in which $a = 2$, $r = \dfrac{2^2}{2} = 2$ and $n = 9$.

$$\therefore S_n = \frac{a(r^n - 1)}{(r - 1)} = \frac{2 \times (2^9 - 1)}{(2 - 1)} = 2 \times (512 - 1) = 2 \times 511 = 1022.$$

101. The sum of even numbers between 1 and 31 is:

A.6   B.28

C.240   D.512

Answer: Option **C**

Explanation:

Let $S_n = (2 + 4 + 6 + ... + 30)$. This is an A.P. in which $a = 2$, $d = 2$ and $l = 30$

Let the number of terms be n. Then,

$a + (n - 1)d = 30$

$\Rightarrow 2 + (n - 1) \times 2 = 30$

$\Rightarrow n = 15$.

$$\therefore S_n = \frac{n}{2}(a + l) = \frac{15}{2} \times (2 + 30) = (15 \times 16) = 240.$$

---

102. If the number 91876 * 2 is completely divisible by 8, then the smallest whole number in place of * will be:

A.1   B.2

C.3   D.4

E.None of these

Answer: Option **C**

Explanation:

Then number $6x2$ must be divisible by 8.

$\therefore \quad x = 3$, as 632 is divisible 8.

---

103. 2056 x 987 = ?

A.1936372   B.2029272

C.1896172   D.1926172

E.None of these

Answer: Option **B**

Explanation:

2056 x 987= 2056 x (1000 - 13)

                = 2056 x 1000 - 2056 x 13

                = 2056000 - 26728

                = 2029272.

---

104. On multiplying a number by 7, the product is a number each of whose digits is 3. The smallest such number is:

A.47619   B.47719

C.48619   D.47649

Answer: Option **A**

Explanation:

By hit and trial, we find that

47619 x 7 = 333333.

$\therefore$ $x + y = (6 + 0) = 6$.

105.

If 60% of $\dfrac{3}{5}$ of a number is 36, then the number is:

A. 80   B. 100

C. 75   D. 90

Answer & Explanation

Answer: Option **B**

Explanation:

Let the number be x. Then

60% of $\dfrac{3}{5}$ of $x = 36$

$\Rightarrow \dfrac{60}{100} \times \dfrac{3}{5} \times x = 36$

$\Rightarrow x = \left(36 \times \dfrac{25}{9} \right) = 100$

$\therefore$ Required number = 100

---

106. If x and y are the two digits of the number $653xy$ such that this number is divisible by 80, then $x + y = $?

A. 2 or 6   B. 4

C. 4 or 8   D. 8

E. None of these

Answer & Explanation

Answer: Option **A**

Explanation:

$80 = 2 \times 5 \times 8$

Since $653xy$ is divisible by 2 and 5 both, so $y = 0$.

Now, $653x$ is divisible by 8, so $13x$ should be divisible by 8.

This happens when $x = 6$.

---

107. The difference of the squares of two consecutive odd integers is divisible by which of the following integers ?

A. 3   B. 6

C. 7   D. 8

Answer & Explanation

Answer: Option **D**

Explanation:

Let the two consecutive odd integers be $(2n + 1)$ and $(2n + 3)$. Then,

$(2n + 3)^2 - (2n + 1)^2 = (2n + 3 + 2n + 1)(2n + 3 - 2n - 1)$

$= (4n + 4) \times 2$

$= 8(n + 1)$, which is divisible by 8.

---

108. What is the unit digit in $(4137)^{754}$?

A. 1   B. 3

C. 7   D. 9

Answer & Explanation

Answer: Option **D**

Explanation:

Unit digit in $(4137)^{754}$ = Unit digit in $\{[(4137)^4]^{188} \times (4137)^2\}$

= Unit digit in { 292915317923361 x 17114769 }

$= (1 \times 9) = 9$

---

109. 587 x 999 = ?

A. 586413   B. 587523

C. 614823   D. 615173

Answer & Explanation

Answer: Option **A**

Explanation:

$587 \times 999 = 587 \times (1000 - 1)$

$= 587 \times 1000 - 587 \times 1$

$= 587000 - 587$

$= 586413.$

---

110. A number was divided successively in order by 4, 5 and 6. The remainders were respectively 2, 3 and 4. The number is:

A. 214   B. 476

C. 954   D. 1908

Answer & Explanation

Answer: Option **A**

Explanation:

```
4 | x        z = 6 x 1 + 4  = 10
-----------
5 | y -2      y = 5 x z + 3  = 5 x 10 + 3  = 53
-----------
6 | z - 3     x = 4 x y + 2  = 4 x 53 + 2  = 214
-----------
  | 1 - 4
```

Hence, required number = 214.

111. If $(64)^2 - (36)^2 = 20 \times x$, then $x = $?

A. 70   B. 120

C. 180   D. 140

E. None of these

Answer & Explanation

Answer: Option **D**

Explanation:

$20 \times x = (64 + 36)(64 - 36) = 100 \times 28$

$\Rightarrow \quad x = \dfrac{100 \times 28}{20} = 140$

---

112. Which one of the following can't be the square of natural number ?

A. 32761   B. 81225

C. 42437   D. 20164

E. None of these

Answer & Explanation

Answer: Option **C**

Explanation:

The square of a natural number never ends in 7.

$\therefore$ 42437 is not the square of a natural number.

---

113. $(2^2 + 4^2 + 6^2 + ... + 20^2) = $?

A. 770   B. 1155

C. 1540   D. 385 x 385

Answer & Explanation

Answer: Option **C**

Explanation:

$(2^2 + 4^2 + 6^2 + ... + 20^2) = (1 \times 2)^2 + (2 \times 2)^2 + (2 \times 3)^2 + ... + (2 \times 10)^2$

$= (2^2 \times 1^2) + (2^2 \times 2^2) + (2^2 \times 3^2) + ... + (2^2 \times 10^2)$

$= 2^2 \times [1^2 + 2^2 + 3^2 + ... + 10^2]$

$$\left[\textbf{Ref: } (1^2 + 2^2 + 3^2 + ... + n^2) = \frac{1}{6} n(n + 1)(2n + 1) \right]$$

$$= \left(4 \times \frac{1}{6} \times 10 \times 11 \times 21 \right)$$

$= (4 \times 5 \times 77)$

$= 1540.$

---

114. $\dfrac{854 \times 854 \times 854 - 276 \times 276 \times 276}{854 \times 854 + 854 \times 276 + 276 \times 276} = $?

A. 1130   B. 578

C. 565   D. 1156

E. None of these

Answer: Option **B**

Explanation:

Given Exp. $= \dfrac{(a^3 - b^3)}{(a^2 + ab + b^2)} = (a - b) = (854 - 276) = 578$

---

115. 35 + 15 x 1.5 = ?
    A.85   B.51.5

    C.57.5   D.5.25

    E. None of these

Answer: Option **C**

Explanation:

Given Exp. $= 35 + 15 \times \dfrac{3}{2} = 35 + \dfrac{45}{2} = 35 + 22.5 = 57.5$

---

116. The sum of first 45 natural numbers is:
    A.1035   B.1280

    C.2070   D.2140

Answer: Option **A**

Explanation:

Let $S_n = (1 + 2 + 3 + ... + 45)$

This is an A.P. in which $a = 1$, $d = 1$, $n = 45$ and $l = 45$

$\therefore S_n = \dfrac{n}{2}(a + l) = \dfrac{45}{2} \times (1 + 45) = (45 \times 23) = 1035$

Required sum = 1035.

---

117. 666 ÷ 6 ÷ 3 = ?

A.37   B.333

C.111   D.84

E. None of these

Answer: Option **A**

Explanation:

Given Exp. $= 666 \times \dfrac{1}{6} \times \dfrac{1}{3} = 37$

---

118. The sum of all two digit numbers divisible by 5 is:
    A.1035   B.1245

    C.1230   D.945

    E. None of these

Answer: Option **D**

Explanation:

Required numbers are 10, 15, 20, 25, ..., 95

This is an A.P. in which $a = 10$, $d = 5$ and $l = 95$.

$t_n = 95 \implies a + (n - 1)d = 95$

$\implies 10 + (n - 1) \times 5 = 95$

$\implies (n - 1) \times 5 = 85$

$\implies (n - 1) = 17$

$\implies n = 18$

$\therefore$ Requuired Sum $= \dfrac{n}{2}(a + l) = \dfrac{18}{2} \times (10 + 95) = (9 \times 105) = 945.$

---

119. The difference between the place values of two sevens in the numeral 69758472 is
    A.0   B.6993

    C.699930   D.None of these

Answer: Option **C**

Explanation:

Required difference = (700000 - 70) = 699930

---

120. On dividing a number by 68, we get 269 as quotient and 0 as remainder. On dividing the same number by 67, what will the remainder ?
A.0   B.1

C.2   D.3

Answer: Option **B**

Explanation:

Number = 269 x 68 + 0 = 18292

```
 67) 18292 (273
     134
     ----
     489
     469
     ----
     202
     201
     ---
       1
     ---
```

Therefore, Required remainder = 1

121. What is the unit digit in the product $(3^{65} \times 6^{59} \times 7^{71})$?
A.1   B.2

C.4   D.6

Answer: Option **C**

Explanation:

Unit digit in $3^4 = 1 \Rightarrow$ Unit digit in $(3^4)^{16} = 1$

$\therefore$ Unit digit in 3^{65} = Unit digit in $[(3^4)^{16} \times 3] = (1 \times 3) = 3$

Unit digit in $6^{59} = 6$

Unit digit in $7^4 \Rightarrow$ Unit digit in $(7^4)^{17}$ is 1.

Unit digit in 7^{71} = Unit digit in $[(7^4)^{17} \times 7^3] = (1 \times 3) = 3$

$\therefore$ Required digit = Unit digit in $(3 \times 6 \times 3) = 4$.

---

122. 3251 + 587 + 369 - ? = 3007
A.1250   B.1300

C.1375   D.1200

E. None of these

Answer: Option **D**

Explanation:

```
 3251        Let 4207 - x = 3007
+ 587        Then,  x = 4207 - 3007 = 1200
+ 369
 ----
 4207
 ----
```

---

123. 7589 - ? = 3434
A.4242   B.4155

C.1123   D.11023

E. None of these

Answer: Option **B**

Explanation:

Let 7589 -x = 3434

Then, x = 7589 - 3434 = 4155

---

124. 217 x 217 + 183 x 183 = ?
A.79698   B.80578

C.80698   D.81268

Answer: Option **B**

Explanation:

$(217)^2 + (183)^2 = (200 + 17)^2 + (200 - 17)^2$

$= 2 \times [(200)^2 + (17)^2]$ [**Ref:** $(a + b)^2 + (a - b)^2 = 2(a^2 + b^2)$]

$= 2[40000 + 289]$

$= 2 \times 40289$

$= 80578.$

---

125. The unit digit in the product (784 x 618 x 917 x 463) is:

A. 2   B. 3

C. 4   D. 5

Answer & Explanation

Answer: Option **A**

Explanation:

Unit digit in the given product = Unit digit in (4 x 8 x 7 x 3) = (672) = 2

---

126. If the number 653 xy is divisible by 90, then $(x + y) = ?$

A. 2   B. 3

C. 4   D. 6

Answer & Explanation

Answer: Option **C**

Explanation:

$90 = 10 \times 9$

Clearly, 653xy is divisible by 10, so $y = 0$

Now, 653x0 is divisible by 9.

So, $(6 + 5 + 3 + x + 0) = (14 + x)$ is divisible by 9. So, $x = 4$.

Hence, $(x + y) = (4 + 0) = 4.$

---

127. 3897 x 999 = ?

A. 3883203   B. 3893103

C. 3639403   D. 3791203

E. None of these

Answer & Explanation

Answer: Option **B**

Explanation:

3897 x 999 = 3897 x (1000 - 1)

$= 3897 \times 1000 - 3897 \times 1$

$= 3897000 - 3897$

$= 3893103.$

---

128. What is the unit digit in 7^{105} ?

A. 1   B. 5

C. 7   D. 9

Answer & Explanation

Answer: Option **C**

Explanation:

Unit digit in 7^{105} = Unit digit in $[(7^4)^{26} \times 7]$

But, unit digit in $(7^4)^{26} = 1$

∴ Unit digit in $7^{105} = (1 \times 7) = 7$

---

129. Which of the following numbers will completely divide $(4^{61} + 4^{62} + 4^{63} + 4^{64})$?

A. 3   B. 10

C. 11   D. 13

Answer & Explanation

Answer: Option **B**

Explanation:

$(4^{61} + 4^{62} + 4^{63} + 4^{64}) = 4^{61} \times (1 + 4 + 4^2 + 4^3) = 4^{61} \times 85$

$= 4^{60} \times (4 \times 85)$

= (4^{60} x 340), which is divisible by 10.

---

130. 106 x 106 - 94 x 94 = ?
A. 2400　　　　　B. 2000

C. 1904　　　　　D. 1906

E. None of these

Answer & Explanation

Answer: Option **A**

Explanation:

$\dfrac{106 \times 106 - 94}{\times 94} = (106)^2 - (94)^2$

$= (106 + 94)(106 - 94)$ [**Ref:** $(a^2 - b^2)$

$= (a + b)(a - b)$]

$= (200 \times 12)$

$= 2400.$

131. A number when divided successively by 4 and 5 leaves remainders 1 and 4 respectively. When it is successively divided by 5 and 4, then the respective remainders will be
A. 1, 2　　　　　B. 2, 3

C. 3, 2　　　　　D. 4, 1

Answer & Explanation

Answer: Option **B**

Explanation:

```
4 | x        y = (5 x 1 + 4) = 9
--------
5 | y -1     x = (4 x y + 1) = (4 x 9 + 1) = 37
--------
  | 1 -4
```

Now, 37 when divided successively by 5 and 4, we get

```
5 | 37
---------
4 | 7 - 2
---------
  | 1 - 3
```

Respective remainders are 2 and 3.

132. 8796 x 223 + 8796 x 77 = ?
A. 2736900　　　　　B. 2638800

C. 2658560　　　　　D. 2716740

E. None of these

Answer & Explanation

Answer: Option **B**

Explanation:

8796 x 223 + 8796 x 77　= 8796 x (223 + 77) [**Ref:** *By Distributive Law*]

= (8796 x 300)

= 2638800

---

133. 8988 ÷ 8 ÷ 4 = ?
A. 4494　　　　　B. 561.75

C. 2247　　　　　D. 280.875

E. None of these

Answer & Explanation

Answer: Option **D**

Explanation:

Given Exp. = 8988 x $\dfrac{1}{8}$ x $\dfrac{1}{4}$ = $\dfrac{2247}{8}$ = 280.875

---

134. 287 x 287 + 269 x 269 - 2 x 287 x 269 = ?
A. 534　　　　　B. 446

C. 354　　　　　D. 324

E. None of these

Answer & Explanation

Answer: Option **D**

Explanation:

Given Exp.= $a^2 + b^2 - 2ab$, where $a = 287$ and $b = 269$

$$= (a - b)^2 = (287 - 269)^2$$

$$= (18^2)$$

$$= 324$$

---

135. $3 + 33 + 333 + 3.33 = ?$
A. 362.3   B. 372.33

C. 702.33   D. 702

E. None of these

Answer & Explanation

Answer: Option **B**

Explanation:

```
   3
+  33
+ 333
+   3.33
  ------
  372.33
  ------
```

136. Which one of the following can't be the square of natural number ?
A. 30976   B. 75625

C. 28561   D. 143642

E. None of these

Answer & Explanation

Answer: Option **D**

Explanation:

The square of a natural number nerver ends in 2.

∴ 143642 is not the square of natural number.

---

137. $(1000)^9 \div 10^{24} = ?$
A. 10000   B. 1000

C. 100   D. 10

E. None of these

Answer & Explanation

Answer: Option **B**

Explanation:

Given Exp. $= \dfrac{(1000)^9}{10^{24}} = \dfrac{(10^3)^9}{10^{24}} = \dfrac{(10)^{27}}{10^{24}} = 10^{(27-24)} = 10^3 = 1000$

---

138. $\{(476 + 424)^2 - 4 \times 476 \times 424\} = ?$
A. 2906   B. 3116

C. 2704   D. 2904

E. None of these

Answer & Explanation

Answer: Option **C**

Explanation:

Given Exp. $= [(a + b)^2 - 4ab]$, where $a = 476$ and $b = 424$

$$= [(476 + 424)^2 - 4 \times 476 \times 424]$$

$$= [(900)^2 - 807296]$$

$$= 810000 - 807296$$

$$= 2704.$$

20. Decimal Fraction

1. Evaluate : $\dfrac{(2.39)^2 - (1.61)^2}{2.39 - 1.61}$
A. 2   B. 4
C. 6   D. 8
Answer & Explanation

Answer: Option **B**

Explanation:

Given Expression $= \dfrac{a^2 - b^2}{a - b} = \dfrac{(a + b)(a - b)}{(a - b)} = (a + b) = (2.39 + 1.61) = 4.$

---

2. What decimal of an hour is a second ?
A. .0025   B. .0256
C. .00027   D. .000126

Answer & Explanation

Answer: Option **C**

Explanation:

Required decimal = $\dfrac{1}{60 \times 60} = \dfrac{1}{3600} = .00027$

---

3. The value of $\dfrac{(0.96)^3 - (0.1)^3}{(0.96)^2 + 0.096 + (0.1)^2}$ is:

A.0.86   B.0.95
C.0.97   D.1.06
Answer & Explanation

Answer: Option **A**

Explanation:

Given expression= $\dfrac{(0.96)^3 - (0.1)^3}{(0.96)^2 + (0.96 \times 0.1) + (0.1)^2}$

$= \left(\dfrac{a^3 - b^3}{a^2 + ab + b^2} \right)$

$= (a - b)$

$= (0.96 - 0.1)$

$= 0.86$

---

4. The value of $\dfrac{0.1 \times 0.1 \times 0.1 + 0.02 \times 0.02 \times 0.02}{0.2 \times 0.2 \times 0.2 + 0.04 \times 0.04 \times 0.04}$ is:

A.0.0125   B.0.125
C.0.25   D.0.5
Answer & Explanation

Answer: Option **B**

Explanation:

Given expression $= \dfrac{(0.1)^3 + (0.02)^3}{2^3 [(0.1)^3 + (0.02)^3]} = \dfrac{1}{8} = 0.125$

---

5. If 2994 ÷ 14.5 = 172, then 29.94 ÷ 1.45 = ?
A.0.172   B.1.72
C.17.2   D.172
Answer & Explanation

Answer: Option **C**

Explanation:

$\dfrac{29.94}{1.45} = \dfrac{299.4}{14.5}$

$= \left(\dfrac{2994}{14.5} \times \dfrac{1}{10} \right)$ [Here, Substitute 172 in the place of 2994/14.5]

$= 172$

10

$= 17.2$

6. When 0.232323..... is converted into a fraction, then the result is:

A.$\dfrac{1}{5}$ B.$\dfrac{2}{9}$
C.$\dfrac{23}{99}$ D.$\dfrac{23}{100}$
Answer & Explanation

Answer: Option **C**

Explanation:

$0.232323... = 0.\overline{23} = \dfrac{23}{99}$

---

7. $\dfrac{.009}{?} = .01$

A..0009   B..09
C..9   D.9
Answer & Explanation

Answer: Option **C**

Explanation:

Let $\dfrac{.009}{x} = .01$;   Then $x = \dfrac{.009}{.01} = \dfrac{.9}{1} = .9$

---

8. The expression (11.98 x 11.98 + 11.98 x x + 0.02 x 0.02) will be a perfect square for x equal to:
A.0.02   B.0.2
C.0.04   D.0.4
Answer & Explanation

Answer: Option **C**

Explanation:

Given expression = $(11.98)^2 + (0.02)^2 + 11.98 \times x$.

For the given expression to be a perfect square, we must have

$11.98 \times x = 2 \times 11.98 \times 0.02$ or $x = 0.04$

---

9. $\dfrac{(0.1667)(0.8333)(0.3333)}{(0.2222)(0.6667)(0.1250)}$ is approximately equal to:

A.2   B.2.40
C.2.43   D.2.50
Answer & Explanation

Answer: Option **D**

Explanation:

Given expression$= \dfrac{(0.3333)(0.1667)(0.8333)}{(0.2222) \times (0.6667)(0.1250)}$

$= \dfrac{\dfrac{3333}{2222} \times \dfrac{1}{6} \times \dfrac{5}{6}}{\dfrac{2}{3} \times \dfrac{125}{1000}}$

$= \left(\dfrac{3}{2} \times \dfrac{1}{6} \times \dfrac{5}{6} \times \dfrac{3}{2} \times 8 \right)$

$= \dfrac{5}{2}$

$= 2.50$

---

10. $3889 + 12.952 - ? = 3854.002$

    A.47.095   B.47.752
    C.47.932   D.47.95
    Answer & Explanation

    Answer: Option **D**

    Explanation:

    Let $3889 + 12.952 - x = 3854.002$.

    Then $x = (3889 + 12.952) - 3854.002$

      $= 3901.952 - 3854.002$

      $= 47.95$.

11. 0.04×0.0162 is equal to:

    A.6.48×10^{-3} B.6.48×10^{-4}
    C.6.48×10^{-5} D.6.48×10^{-6}
    Answer & Explanation

    Answer: Option **B**

    Explanation:

    $4 \times 162 = 648$. Sum of decimal places $= 6$.
    So, $0.04 \times 0.0162 = 0.000648 = 6.48 \times 10^{-4}$

---

12. $\dfrac{4.2 \times 4.2 - 1.9 \times 1.9}{2.3 \times 6.1}$ is equal to:

    A.0.5   B.1.0
    C.20   D.22
    Answer & Explanation

    Answer: Option **B**

    Explanation:

    Given Expression $= \dfrac{(a^2 - b^2)}{(a+b)(a-b)} = \dfrac{(a^2 - b^2)}{(a^2 - b^2)} = 1$.

13. If $\dfrac{144}{0.144} = \dfrac{14.4}{x}$, then the value of x is:

    A.0.0144   B.1.44
    C.14.4   D.144
    Answer & Explanation

    Answer: Option **A**

    Explanation:

    $\dfrac{144}{0.144} = \dfrac{14.4}{x}$

    $\Rightarrow \dfrac{144 \times 1000}{144} = \dfrac{14.4}{x}$

    $\Rightarrow x = \dfrac{14.4}{1000} = 0.0144$

---

14. The price of commodity X increases by 40 paise every year, while the price of commodity Y increases by 15 paise every year. If in 2001, the price of commodity X was Rs. 4.20 and that of Y was Rs. 6.30, in which year commodity X will cost 40 paise more than the commodity Y ?

    A.2010   B.2011
    C.2012   D.2013
    Answer & Explanation

    Answer: Option **B**

    Explanation:

    Suppose commodity X will cost 40 paise more than Y after z years.

    Then, $(4.20 + 0.40z) - (6.30 + 0.15z) = 0.40$

    $\Rightarrow 0.25z = 0.40 + 2.10$

    $\Rightarrow z = \dfrac{2.50}{0.25} = \dfrac{250}{25} = 10$.

    $\therefore X$ will cost 40 paise more than Y 10 years after 2001 *i.e.,* 2011.

---

15. Which of the following are in descending order of their value ?

    A.$\dfrac{1}{3}, \dfrac{2}{5}, \dfrac{3}{7}, \dfrac{4}{5}, \dfrac{5}{6}, \dfrac{6}{7}$ B.$\dfrac{1}{3}, \dfrac{2}{5}, \dfrac{3}{5}, \dfrac{4}{7}, \dfrac{5}{6}, \dfrac{6}{7}$

    C.$\dfrac{1}{3}, \dfrac{2}{5}, \dfrac{3}{5}, \dfrac{4}{6}, \dfrac{5}{7}, \dfrac{6}{7}$ D.$\dfrac{6}{7}, \dfrac{5}{6}, \dfrac{4}{5}, \dfrac{3}{7}, \dfrac{2}{5}, \dfrac{1}{3}$

    Answer & Explanation

    Answer: Option **D**

Explanation:

No answer description available for this question. **Let us discuss**.

16.   Which of the following fractions is greater than $\frac{3}{4}$ and less than $\frac{5}{6}$?

A. $\frac{1}{2}$ B. $\frac{2}{3}$

C. $\frac{4}{5}$ D. $\frac{9}{10}$

Answer & Explanation

Answer: Option **C**

Explanation:

$\frac{3}{4} = 0.75$, $\frac{5}{6} = 0.833$, $\frac{1}{2} = 0.5$, $\frac{2}{3} = 0.66$, $\frac{4}{5} = 0.8$, $\frac{9}{10} = 0.9$.

Clearly, 0.8 lies between 0.75 and 0.833.

$\therefore$ $\frac{4}{5}$ lies between $\frac{3}{4}$ and $\frac{5}{6}$.

17. The rational number for recurring decimal 0.125125.... is:

A. $\frac{63}{487}$ B. $\frac{119}{993}$

C. $\frac{125}{999}$ D. None of these

Answer & Explanation

Answer: Option **C**

Explanation:

$0.125125... = 0.\overline{125} = \frac{125}{999}$

18. 617 + 6.017 + 0.617 + 6.0017 = ?

A. 6.2963   B. 62.965
C. 629.6357   D. None of these

Answer & Explanation

Answer: Option **C**

Explanation:

```
  617.00
    6.017
    0.617
 +  6.0017
 --------
  629.6357
 ---------
```

19. The value of $\frac{489.1375 \times 0.0483 \times 1.956}{0.0873 \times 92.581 \times 99.749}$ is closet to:

A. 0.006   B. 0.06
C. 0.6   D. 6

Answer & Explanation

Answer: Option **B**

Explanation:

$$\frac{489.1375 \times 0.0483 \times 1.956}{0.0873 \times 92.581 \times 99.749} \approx \frac{489 \times 0.05 \times 2}{0.09 \times 93 \times 100}$$

$$= \frac{489}{9 \times 93 \times 10}$$

$$= \frac{163}{279} \times \frac{1}{10}$$

$$= \frac{0.58}{10}$$

$= 0.058 \approx 0.06.$

20. 0.002 x 0.5 = ?

A. 0.0001   B. 0.001
C. 0.01   D. 0.1

Answer & Explanation

Answer: Option **B**

Explanation:

2 x 5 = 10.

Sum of decimal places = 4

$\therefore$ 0.002 x 0.5 = 0.001

```
  240.016
 + 23.98
 --------
  298.946
 --------
```

22. Which of the following is equal to 3.14×10^6 ?

A. 314   B. 3140
C. 3140000   D. None of these

Answer & Explanation

Answer: Option **C**

Explanation:

$3.14 \times 10^6 = 3.14 \times 1000000 = 3140000.$

23. The least among the following is:

A. 0.2   B. $1 \div 0.2$
C. 0.2   D. $(0.2)^2$

Answer: Option **D**

Explanation:

$$1 \div 0.2 = \frac{1}{0.2} = \frac{10}{2} = 5;$$

$$0.\overline{2} = 0.222...;$$

$$(0.2)^2 = 0.04.$$

$$0.04 < 0.2 < 0.22....<5.$$

Since 0.04 is the least, so $(0.2)^2$ is the least.

---

24. $\dfrac{5 \times 1.6 - 2 \times 1.4}{1.3} = ?$

A.0.4   B.1.2
C.1.4   D.4
Answer & Explanation

Answer: Option **D**

Explanation:

Given Expression $= \dfrac{8 - 2.8}{1.3} = \dfrac{5.2}{1.3} = \dfrac{52}{13} = 4.$

---

25. How many digits will be there to the right of the decimal point in the product of 95.75 and .02554 ?
A.5   B.6
C.7   D.None of these
Answer & Explanation

Answer: Option **B**

Explanation:

Sum of decimal places = 7.

Since the last digit to the extreme right will be zero (since 5 x 4 = 20), so there will be 6 significant digits to the right of the decimal point.

26. The correct expression of 6.$\overline{46}$ in the fractional form is:

A. $\dfrac{646}{99}$ B. $\dfrac{64640}{1000}$

C. $\dfrac{640}{100}$ D. $\dfrac{640}{99}$

Answer & Explanation

Answer: Option **D**

Explanation:

$$6.\overline{46} = 6 + 0.\overline{46} = 6 + \frac{46}{99} = \frac{594 + 46}{99} = \frac{640}{99}.$$

---

27. The fraction $101\dfrac{27}{100000}$ in decimal for is:

A..01027   B..10127
C.101.00027   D.101.000027
Answer & Explanation

Answer: Option **C**

Explanation:

$$101\frac{27}{100000} = 101 + \frac{27}{100000} = 101 + .00027 = 101.00027$$

---

28. $\dfrac{0.0203 \times 2.92}{0.0073 \times 14.5 \times 0.7} = ?$

A.0.8   B.1.45
C.2.40   D.3.25
Answer & Explanation

Answer: Option **A**

Explanation:

$$\frac{0.0203 \times 2.92}{0.0073 \times 14.5 \times 0.7} = \frac{203 \times 292}{73 \times 145 \times 7} = \frac{4}{5} = 0.8$$

---

29. 4.036 divided by 0.04 gives :
A.1.009   B.10.09
C.100.9   D.None of these
Answer & Explanation

Answer: Option **C**

Explanation:

$$\frac{4.036}{0.04} = \frac{403.6}{4} = 100.9$$

---

30. 3.$\overline{87}$ - 2.$\overline{59}$ = ?
A.1.20   B.1.2
C.1.$\overline{27}$ D.1.$\overline{28}$
Answer & Explanation

Answer: Option **D**

Explanation:

3.$\overline{87}$ - 2.$\overline{59}$ = (3 + 0.$\overline{87}$) - (2 + 0.$\overline{59}$)

$$= \left(3 + \frac{87}{99}\right) - \left(2 + \frac{59}{99}\right)$$
$$= 1 + \left(\frac{87}{99} - \frac{59}{99}\right)$$

$$= 1 + \frac{28}{99}$$

$$= 1.\overline{28}.$$

20.Surds and Indices

1. $(17)^{3.5} \times (17)^? = 17^8$
   A.2.29   B.2.75
   C.4.25   D.4.5
   Answer & Explanation

   Answer: Option **D**

   Explanation:

   Let $(17)^{3.5} \times (17)^x = 17^8$.

   Then, $(17)^{3.5 + x} = 17^8$.

   $\therefore 3.5 + x = 8$

   $\Rightarrow x = (8 - 3.5)$

   $\Rightarrow x = 4.5$

2. If $\binom{a}{b}x - 1 = \binom{b}{a}x - 3$, then the value of x is:

   A.$\frac{1}{2}$ B.1

   C.2   D.$\frac{7}{2}$

   Answer & Explanation

   Answer: Option **C**

   Explanation:

   Given $\binom{a}{b}x - 1 = \binom{b}{a}x - 3$

   $\Rightarrow \binom{a}{b}x - 1 = \binom{a}{b}^{-(x - 3)} = \binom{a}{b}(3 - x)$

   $\Rightarrow x - 1 = 3 - x$

   $\Rightarrow 2x = 4$

   $\Rightarrow x = 2.$

3. Given that $10^{0.48} = x$, $10^{0.70} = y$ and $x^z = y^2$, then the value of z is close to:
   A.1.45   B.1.88
   C.2.9   D.3.7
   Answer & Explanation

   Answer: Option **C**

   Explanation:

   $x^z = y^2 \iff 10^{(0.48z)} = 10^{(2 \times 0.70)} = 10^{1.40}$

   $\Rightarrow 0.48z = 1.40$

   $\Rightarrow z = \frac{140}{48} = \frac{35}{12} = 2.9$ (approx.)

4. If $5^a = 3125$, then the value of $5^{(a - 3)}$ is:
   A.25   B.125
   C.625   D.1625
   Answer & Explanation

   Answer: Option **A**

   Explanation:

   $5^a = 3125 \iff 5^a = 5^5$

   $\Rightarrow a = 5.$

   $\therefore 5^{(a - 3)} = 5^{(5 - 3)} = 5^2 = 25.$

5. If $3^{(x - y)} = 27$ and $3^{(x + y)} = 243$, then x is equal to:
   A.0   B.2
   C.4   D.6
   Answer & Explanation

   Answer: Option **C**

   Explanation:

   $3^{x - y} = 27 = 3^3 \iff x - y = 3$ ....(i)

   $3^{x + y} = 243 = 3^5 \iff x + y = 5$ ....(ii)

   On solving (i) and (ii), we get $x = 4$.

6. $(256)^{0.16} \times (256)^{0.09} = ?$
   A.4   B.16
   C.64   D.256.25
   Answer & Explanation

   Answer: Option **A**

   Explanation:

   $(256)^{0.16} \times (256)^{0.09} = (256)^{(0.16 + 0.09)}$

   $= (256)^{0.25}$

   $= (256)^{(25/100)}$

$$= (256)^{(1/4)}$$

$$= (4^4)^{(1/4)}$$

$$= 4^{4(1/4)}$$

$$= 4^1$$

$$= 4$$

---

7. The value of $[(10)^{150} \div (10)^{146}]$
   - A. 1000
   - B. 10000
   - C. 100000
   - D. 10^6

   Answer & Explanation

   Answer: Option **B**

   Explanation:

   $$(10)^{150} \div (10)^{146} = \frac{10^{150}}{10^{146}}$$

   $$= 10^{150 - 146}$$

   $$= 10^4$$

   $$= 10000.$$

---

8. $\dfrac{1}{1 + x^{(b - a)} + x^{(c - a)}} + \dfrac{1}{1 + x^{(a - b)} + x^{(c - b)}} + \dfrac{1}{1 + x^{(b - c)} + x^{(a - c)}} = ?$
   - A. 0
   - B. 1
   - C. $x^{a - b - c}$
   - D. None of these

   Answer & Explanation

   Answer: Option **B**

   Explanation:

   Given Exp. $= \left(\dfrac{1}{1 + \frac{x^b}{x^a} + \frac{x^c}{x^a}} \right) + \left(\dfrac{1}{1 + \frac{x^a}{x^b} + \frac{x^c}{x^b}} \right) + \left(\dfrac{1}{1 + \frac{x^b}{x^c} + \frac{x^a}{x^c}} \right)$

   $= \dfrac{x^a}{(x^a + x^b + x^c)} + \dfrac{x^b}{(x^a + x^b + x^c)} + \dfrac{x^c}{(x^a + x^b + x^c)}$

   $= \dfrac{(x^a + x^b + x^c)}{(x^a + x^b + x^c)}$

   $= 1.$

---

9. $(25)^{7.5} \times (5)^{2.5} \div (125)^{1.5} = 5^?$
   - A. 8.5
   - B. 13
   - C. 16
   - D. 17.5
   - E. None of these

   Answer & Explanation

   Answer: Option **B**

Explanation:

Let $(25)^{7.5} \times (5)^{2.5} \div (125)^{1.5} = 5^x$.

Then, $\dfrac{(5^2)^{7.5} \times (5)^{2.5}}{(5^3)^{1.5}} = 5^x$

$\Rightarrow \dfrac{5^{(2 \times 7.5)} \times 5^{2.5}}{5^{(3 \times 1.5)}} = 5x$

$\Rightarrow \dfrac{5^{15} \times 5^{2.5}}{5^{4.5}} = 5^x$

$\Rightarrow 5^x = 5^{(15 + 2.5 - 4.5)}$

$\Rightarrow 5^x = 5^{13}$

$\therefore x = 13.$

---

10. $(0.04)^{-1.5} = ?$
    - A. 25
    - B. 125
    - C. 250
    - D. 625

    Answer & Explanation

    Answer: Option **B**

    Explanation:

    $$(0.04)^{-1.5} = \left(\frac{4}{100} \right)^{-1.5}$$

    $$= \left(\frac{1}{25} \right)^{-(3/2)}$$

    $$= (25)^{(3/2)}$$

    $$= (5^2)^{(3/2)}$$

    $$= (5)^{2 \times (3/2)}$$

    $$= 5^3$$

    $$= 125.$$

11. $\dfrac{(243)^{n/5} \times 3^{2n + 1}}{9^n \times 3^{n - 1}} = ?$
    - A. 1
    - B. 2
    - C. 9
    - D. 3^n

    Answer & Explanation

    Answer: Option **C**

    Explanation:

    Given Expression $= \dfrac{(243)^{(n/5)} \times 3^{2n + 1}}{9^n \times 3^{n - 1}}$

    $= \dfrac{(3^5)^{(n/5)} \times 3^{2n + 1}}{(3^2)^n \times 3^{n - 1}}$

    $= (3^{5 \times (n/5)} \times 3^{2n + 1})$

$$(3^{2n} \times 3^{n-1})$$
$$= \frac{3^n \times 3^{2n+1}}{3^{2n} \times 3^{n-1}}$$
$$= \frac{3^{(n+2n+1)}}{3^{(2n+n-1)}}$$
$$= \frac{3^{3n+1}}{3^{3n-1}}$$
$$= 3^{(3n+1-3n+1)} = 3^2 = 9.$$

---

12. $\frac{1}{1+a^{(n-m)}} + \frac{1}{1+a^{(m-n)}} = ?$

A. 0   B. $\frac{1}{2}$

C. 1   D. a^{m+n}

Answer & Explanation

Answer: Option **C**

Explanation:

$$\frac{1}{1+a^{(n-m)}} + \frac{1}{1+a^{(m-n)}} = \left(\frac{1}{1+\frac{a^n}{a^m}}\right) + \left(\frac{1}{1+\frac{a^m}{a^n}}\right)$$

$$= \frac{a^m}{(a^m+a^n)} + \frac{a^n}{(a^m+a^n)}$$

$$= \frac{(a^m+a^n)}{(a^m+a^n)}$$

$$= 1.$$

---

13. If m and n are whole numbers such that $m^n = 121$, the value of $(m-1)^{n+1}$ is:

A. 1   B. 10

C. 121   D. 1000

Answer & Explanation

Answer: Option **D**

Explanation:

We know that $11^2 = 121$.

Putting $m = 11$ and $n = 2$, we get:

$(m-1)^{n+1} = (11-1)^{(2+1)} = 10^3 = 1000.$

---

14. $\left(\frac{x^b}{x^c}\right)^{(b+c-a)} \cdot \left(\frac{x^c}{x^a}\right)^{(c+a-b)} \cdot \left(\frac{x^a}{x^b}\right)^{(a+b-c)} = ?$

A. x^{abc} B. 1

C. $x^{ab+bc+ca}$ D. x^{a+b+c}

Answer & Explanation

Answer: Option **B**

Explanation:

Given Exp. $= x^{(b-c)(b+c-a)} \cdot x^{(c-a)(c+a-b)} \cdot x^{(a-b)(a+b-c)}$

$= x^{(b-c)(b+c)-a(b-c)} \cdot x^{(c-a)(c+a)-b(c-a)} \cdot x^{(a-b)(a+b)-c(a-b)}$

$= x^{(b2-c2+c2-a2+a2-b2)} \cdot x^{-a(b-c)-b(c-a)-c(a-b)}$

$= (x^0 \times x^0)$

$= (1 \times 1) = 1.$

---

15. If $x = 3 + 22$, then the value of $\left(x - \frac{1}{x}\right)$ is:

A. 1   B. 2

C. 22   D. 33

Answer & Explanation

Answer: Option **B**

Explanation:

$$\left(x - \frac{1}{x}\right)2 = x + \frac{1}{x} - 2$$

$$= (3 + 22) + \frac{1}{(3+22)} - 2$$

$$= (3 + 22) + \frac{1}{(3+22)} \times \frac{(3-22)}{(3-22)} - 2$$

$$= (3 + 22) + (3 - 22) - 2$$

$$= 4.$$

$$\therefore \left(x - \frac{1}{x}\right) = 2.$$

---

21. Pipes and Cistern

1. Three pipes A, B and C can fill a tank from empty to full in 30 minutes, 20 minutes, and 10 minutes respectively. When the tank is empty, all the three pipes are opened. A, B and C discharge chemical solutions P,Q and R respectively. What is the proportion of the solution R in the liquid in the tank after 3 minutes?

A. $\frac{5}{11}$ B. $\frac{6}{11}$

C. $\frac{7}{11}$ D. $\frac{8}{11}$

Answer & Explanation

Answer: Option **B**

Explanation:

Part filled by (A + B + C) in 3 minutes = $3\left(\dfrac{1}{30}+\dfrac{1}{20}+\dfrac{1}{10}\right)=\left(3\times\dfrac{11}{60}\right)=\dfrac{11}{20}$.

Part filled by C in 3 minutes = $\dfrac{3}{10}$.

∴ Required ratio = $\left(\dfrac{3}{10}\times\dfrac{20}{11}\right)=\dfrac{6}{11}$.

---

2. Pipes A and B can fill a tank in 5 and 6 hours respectively. Pipe C can empty it in 12 hours. If all the three pipes are opened together, then the tank will be filled in:

A. $1\dfrac{13}{17}$ hours   B. $2\dfrac{8}{11}$ hours

C. $3\dfrac{9}{17}$ hours   D. $4\dfrac{1}{2}$ hours

Answer & Explanation

Answer: Option **C**

Explanation:

Net part filled in 1 hour $\left(\dfrac{1}{5}+\dfrac{1}{6}-\dfrac{1}{12}\right)=\dfrac{17}{60}$.

∴ The tank will be full in $\dfrac{60}{17}$ hours *i.e.,* $3\dfrac{9}{17}$ hours.

---

3. A pump can fill a tank with water in 2 hours. Because of a leak, it took $2\dfrac{1}{3}$ hours to fill the tank. The leak can drain all the water of the tank in:

A. $4\dfrac{1}{3}$ hours   B. 7 hours

C. 8 hours   D. 14 hours

Answer & Explanation

Answer: Option **D**

Explanation:

Work done by the leak in 1 hour = $\left(\dfrac{1}{2}-\dfrac{3}{7}\right)=\dfrac{1}{14}$.

∴ Leak will empty the tank in 14 hrs.

4.
Two pipes A and B can fill a cistern in $37\dfrac{1}{2}$ minutes and 45 minutes respectively. Both pipes are opened. The cistern will be filled in just half an hour, if the B is turned off after:

A. 5 min.   B. 9 min.
C. 10 min.   D. 15 min.
Answer & Explanation

Answer: Option **B**

Explanation:

Let B be turned off after x minutes. Then,

Part filled by (A + B) in x min. + Part filled by A in (30 - x) min. = 1.

∴ $x\left(\dfrac{2}{75}+\dfrac{1}{45}\right)+(30-x)\cdot\dfrac{2}{75}=1$

$\Rightarrow\dfrac{11x}{225}+\dfrac{(60-2x)}{75}=1$

$\Rightarrow 11x+180-6x=225$.

$\Rightarrow x=9$.

---

5. A tank is filled by three pipes with uniform flow. The first two pipes operating simultaneously fill the tank in the same time during which the tank is filled by the third pipe alone. The second pipe fills the tank 5 hours faster than the first pipe and 4 hours slower than the third pipe. The time required by the first pipe is:
A. 6 hours   B. 10 hours
C. 15 hours   D. 30 hours
Answer & Explanation

Answer: Option **C**

Explanation:

Suppose, first pipe alone takes x hours to fill the tank .

Then, second and third pipes will take $(x-5)$ and $(x-9)$ hours respectively to fill the tank.

∴ $\dfrac{1}{x}+\dfrac{1}{(x-5)}=\dfrac{1}{(x-9)}$

$\Rightarrow\dfrac{x-5+x}{x(x-5)}=\dfrac{1}{(x-9)}$

$\Rightarrow(2x-5)(x-9)=x(x-5)$

$\Rightarrow x^2-18x+45=0$

$(x-15)(x-3)=0$

$\Rightarrow x=15$.   [neglecting $x=3$]

6. Two pipes can fill a tank in 20 and 24 minutes respectively and a waste pipe can empty 3 gallons per minute. All the three pipes working together can fill the tank in 15 minutes. The capacity of the tank is:
A. 60 gallons   B. 100 gallons
C. 120 gallons   D. 180 gallons
Answer & Explanation

Answer: Option **C**

Explanation:

Work done by the waste pipe in 1 minute $= \frac{1}{15} - \left(\frac{1}{20} + \frac{1}{24} \right)$

$= \left(\frac{1}{15} - \frac{11}{120} \right)$

$= -\frac{1}{40}.$ [-ve sign means emptying]

$\therefore$ Volume of $\frac{1}{40}$ part = 3 gallons.

Volume of whole = (3 x 40) gallons = 120 gallons.

---

7. A tank is filled in 5 hours by three pipes A, B and C. The pipe C is twice as fast as B and B is twice as fast as A. How much time will pipe A alone take to fill the tank?
   A. 20 hours   B. 25 hours
   C. 35 hours   D. Cannot be determined
   E. None of these
   Answer & Explanation

   Answer: Option **C**

   Explanation:

   Suppose pipe A alone takes x hours to fill the tank.

   Then, pipes B and C will take $\frac{x}{2}$ and $\frac{x}{4}$ hours respectively to fill the tank.

   $\therefore \frac{1}{x} + \frac{2}{x} + \frac{4}{x} = \frac{1}{5}$

   $\Rightarrow \frac{7}{x} = \frac{1}{5}$

   $\Rightarrow x = 35$ hrs.

---

8. Two pipes A and B together can fill a cistern in 4 hours. Had they been opened separately, then B would have taken 6 hours more than A to fill the cistern. How much time will be taken by A to fill the cistern separately?
   A. 1 hour   B. 2 hours
   C. 6 hours   D. 8 hours
   Answer & Explanation

   Answer: Option **C**

   Explanation:

   Let the cistern be filled by pipe A alone in x hours.

   Then, pipe B will fill it in $(x + 6)$ hours.

   $\therefore \frac{1}{x} + \frac{1}{(x + 6)} = \frac{1}{4}$

   $\Rightarrow \frac{x + 6 + x}{x(x + 6)} = \frac{1}{4}$

   $\Rightarrow x^2 - 2x - 24 = 0$

$\Rightarrow (x - 6)(x + 4) = 0$

$\Rightarrow x = 6.$ [neglecting the negative value of x]

---

9. Two pipes A and B can fill a tank in 20 and 30 minutes respectively. If both the pipes are used together, then how long will it take to fill the tank?
   A. 12 min   B. 15 min
   C. 25 min   D. 50 min
   Answer & Explanation

   Answer: Option **A**

   Explanation:

   Part filled by A in 1 min $= \frac{1}{20}.$

   Part filled by B in 1 min $= \frac{1}{30}.$

   Part filled by (A + B) in 1 min $= \left(\frac{1}{20} + \frac{1}{30} \right) = \frac{1}{12}.$

   $\therefore$ Both pipes can fill the tank in 12 minutes.

---

10. Two pipes A and B can fill a tank in 15 minutes and 20 minutes respectively. Both the pipes are opened together but after 4 minutes, pipe A is turned off. What is the total time required to fill the tank?
    A. 10 min. 20 sec.   B. 11 min. 45 sec.
    C. 12 min. 30 sec.   D. 14 min. 40 sec.
    Answer & Explanation

    Answer: Option **D**

    Explanation:

    Part filled in 4 minutes $= 4 \left(\frac{1}{15} + \frac{1}{20} \right) = \frac{7}{15}.$

    Remaining part $= \left(1 - \frac{7}{15} \right) = \frac{8}{15}.$

    Part filled by B in 1 minute $= \frac{1}{20}$

    $\therefore \frac{1}{20} : \frac{8}{15} :: 1 : x$

    $x = \left(\frac{8}{15} \times 1 \times 20 \right) = 10 \frac{2}{3}$ min = 10 min. 40 sec.

    $\therefore$ The tank will be full in (4 min. + 10 min. + 40 sec.) = 14 min. 40 sec.

11. One pipe can fill a tank three times as fast as another pipe. If together the two pipes can fill the tank in 36 minutes, then the slower pipe alone will be able to fill the tank in:
    A. 81 min.   B. 108 min.
    C. 144 min.   D. 192 min.
    Answer & Explanation

Answer: Option **C**

Explanation:

Let the slower pipe alone fill the tank in x minutes.

Then, faster pipe will fill it in $\dfrac{x}{3}$ minutes.

$\therefore \dfrac{1}{x} + \dfrac{3}{x} = \dfrac{1}{36}$

$\Rightarrow \dfrac{4}{x} = \dfrac{1}{36}$

$\Rightarrow x = 144$ min.

---

12. A large tanker can be filled by two pipes A and B in 60 minutes and 40 minutes respectively. How many minutes will it take to fill the tanker from empty state if B is used for half the time and A and B fill it together for the other half?

 A. 15 min   B. 20 min
 C. 27.5 min   D. 30 min
Answer & Explanation

Answer: Option **D**

Explanation:

Part filled by (A + B) in 1 minute $= \left(\dfrac{1}{60} + \dfrac{1}{40}\right) = \dfrac{1}{24}$.

Suppose the tank is filled in x minutes.

Then, $\dfrac{x}{2}\left(\dfrac{1}{24} + \dfrac{1}{40}\right) = 1$

$\Rightarrow \dfrac{x}{2} \times \dfrac{1}{15} = 1$

$\Rightarrow x = 30$ min.

---

13. A tap can fill a tank in 6 hours. After half the tank is filled, three more similar taps are opened. What is the total time taken to fill the tank completely?

 A. 3 hrs 15 min   B. 3 hrs 45 min
 C. 4 hrs   D. 4 hrs 15 min
Answer & Explanation

Answer: Option **B**

Explanation:

Time taken by one tap to fill **half of the tank** = 3 hrs.

Part filled by the four taps in 1 hour $= \left(4 \times \dfrac{1}{6}\right) = \dfrac{2}{3}$.

Remaining part $= \left(1 - \dfrac{1}{2}\right) = \dfrac{1}{2}$.

$\therefore \dfrac{2}{3} : \dfrac{1}{2} :: 1 : x$

$\Rightarrow x = \left(\dfrac{1}{2} \times 1 \times \dfrac{3}{2}\right) = \dfrac{3}{4}$ hours *i.e.,* 45 mins.

So, total time taken = 3 hrs. 45 mins.

---

14. Three taps A, B and C can fill a tank in 12, 15 and 20 hours respectively. If A is open all the time and B and C are open for one hour each alternately, the tank will be full in:

 A. 6 hours   B. $6\dfrac{2}{3}$ hours

 C. 7 hours   D. $7\dfrac{1}{2}$ hours

Answer & Explanation

Answer: Option **C**

Explanation:

(A + B)'s 1 hour's work $= \left(\dfrac{1}{12} + \dfrac{1}{15}\right) = \dfrac{9}{60} = \dfrac{3}{20}$.

(A + C)'s hour's work $= \left(\dfrac{1}{12} + \dfrac{1}{20}\right) = \dfrac{8}{60} = \dfrac{2}{15}$.

Part filled in 2 hrs $= \left(\dfrac{3}{20} + \dfrac{2}{15}\right) = \dfrac{17}{60}$.

Part filled in 6 hrs $= \left(3 \times \dfrac{17}{60}\right) = \dfrac{17}{20}$.

Remaining part $= \left(1 - \dfrac{17}{20}\right) = \dfrac{3}{20}$.

Now, it is the turn of A and B and $\dfrac{3}{20}$ part is filled by A and B in 1 hour.

$\therefore$ Total time taken to fill the tank = (6 + 1) hrs = 7 hrs.

---

15. Three pipes A, B and C can fill a tank in 6 hours. After working at it together for 2 hours, C is closed and A and B can fill the remaining part in 7 hours. The number of hours taken by C alone to fill the tank is:

 A. 10   B. 12
 C. 14   D. 16
Answer & Explanation

Answer: Option **C**

Explanation:

Part filled in 2 hours $= \dfrac{2}{6} = \dfrac{1}{3}$

Remaining part $= \left(1 - \dfrac{1}{3}\right) = \dfrac{2}{3}$.

$\therefore$ (A + B)'s 7 hour's work $=\dfrac{3}{3}\dfrac{2}{3}$

(A + B)'s 1 hour's work $=\dfrac{2}{21}$

$\therefore$ C's 1 hour's work = { (A + B + C)'s 1 hour's work } - { (A + B)'s 1 hour's work }

$=\left(\dfrac{1}{6}-\dfrac{2}{21}\right)=\dfrac{1}{14}$

$\therefore$ C alone can fill the tank in 14 hours.

22.Logarithm

1. Which of the following statements is not correct?
   A.$\log_{10} 10 = 1$
   B.$\log (2 + 3) = \log (2 \times 3)$
   C.$\log_{10} 1 = 0$
   D.$\log (1 + 2 + 3) = \log 1 + \log 2 + \log 3$
   Answer & Explanation

   Answer: Option **B**

   Explanation:

   (a) Since $\log_a a = 1$, so $\log_{10} 10 = 1$.

   (b) $\log (2 + 3) = \log 5$ and $\log (2 \times 3) = \log 6 = \log 2 + \log 3$

   $\therefore \log (2 + 3) \neq \log (2 \times 3)$

   (c) Since $\log_a 1 = 0$, so $\log_{10} 1 = 0$.

   (d) $\log (1 + 2 + 3) = \log 6 = \log (1 \times 2 \times 3) = \log 1 + \log 2 + \log 3$.

   So, (b) is incorrect.

2. If log 2 = 0.3010 and log 3 = 0.4771, the value of $\log_5$ 512 is:
   A.2.870   B.2.967
   C.3.876   D.3.912
   Answer & Explanation

   Answer: Option **C**

   Explanation:

   $\log_5 512=\dfrac{\log 512}{\log 5}$

   $=\dfrac{\log 2^9}{\log (10/2)}$

$=\dfrac{9 \log 2}{\log 10 - \log 2}$

$=\dfrac{(9 \times 0.3010)}{1 - 0.3010}$

$=\dfrac{2.709}{0.699}$

$=\dfrac{2709}{699}$

$= 3.876$

3. $\dfrac{\log 8}{\log 8}$ is equal to:
   A.$\dfrac{1}{8}$ B.$\dfrac{1}{4}$
   C.$\dfrac{1}{2}$ D.$\dfrac{1}{8}$
   Answer & Explanation

   Answer: Option **C**

   Explanation:

   $\dfrac{\log \sqrt{8}}{\log 8}=\dfrac{\log (8)^{1/2}}{\log 8}=\dfrac{\frac{1}{2}\log 8}{\log 8}=\dfrac{1}{2}$.

4. If log 27 = 1.431, then the value of log 9 is:
   A.0.934   B.0.945
   C.0.954   D.0.958
   Answer & Explanation

   Answer: Option **C**

   Explanation:

   log 27 = 1.431

   $\Rightarrow \log (3^3) = 1.431$

   $\Rightarrow 3 \log 3 = 1.431$

   $\Rightarrow \log 3 = 0.477$

   $\therefore \log 9 = \log(3^2) = 2 \log 3 = (2 \times 0.477) = 0.954$.

5. If $\log\dfrac{a}{b}+\log\dfrac{b}{a}= \log (a + b)$, then:
   A.$a + b = 1$ B.$a - b = 1$
   C.$a = b$ D.$a^2 - b^2 = 1$
   Answer & Explanation

   Answer: Option **A**

   Explanation:

$$\log\frac{a}{b} + \log\frac{b}{a} = \log(a+b)$$

$$\Rightarrow \log(a+b) = \log\left(\frac{a}{b} \times \frac{b}{a}\right) = \log 1.$$

So, $a + b = 1$.

6. If $\log_{10} 7 = a$, then $\log_{10}\left(\dfrac{1}{70}\right)$ is equal to:

A.- $(1 + a)$ B.$(1 + a)^{-1}$

C.$\dfrac{a}{10}$ D.$\dfrac{1}{10a}$

Answer & Explanation

Answer: Option **A**

Explanation:

$$\log_{10}\left(\frac{1}{70}\right) = \log_{10} 1 - \log_{10} 70$$
$$= -\log_{10}(7 \times 10)$$
$$= -(\log_{10} 7 + \log_{10} 10)$$
$$= -(a + 1).$$

7. If $\log_{10} 2 = 0.3010$, then $\log_2 10$ is equal to:

A.$\dfrac{699}{301}$ B.$\dfrac{1000}{301}$

C.0.3010 D.0.6990

Answer & Explanation

Answer: Option **B**

Explanation:

$$\log_2 10 = \frac{1}{\log_{10} 2} = \frac{1}{0.3010} = \frac{10000}{3010} = \frac{1000}{301}.$$

8. If $\log_{10} 2 = 0.3010$, the value of $\log_{10} 80$ is:

A.1.6020 B.1.9030
C.3.9030 D.None of these

Answer & Explanation

Answer: Option **B**

Explanation:

$$\log_{10} 80 = \log_{10}(8 \times 10)$$
$$= \log_{10} 8 + \log_{10} 10$$
$$= \log_{10}(2^3) + 1$$
$$= 3\log_{10} 2 + 1$$
$$= (3 \times 0.3010) + 1$$
$$= 1.9030.$$

9. If $\log_{10} 5 + \log_{10}(5x + 1) = \log_{10}(x + 5) + 1$, then x is equal to:

A.1 B.3
C.5 D.10

Answer & Explanation

Answer: Option **B**

Explanation:

$$\log_{10} 5 + \log_{10}(5x + 1) = \log_{10}(x + 5) + 1$$

$$\Rightarrow \log_{10} 5 + \log_{10}(5x + 1) = \log_{10}(x + 5) + \log_{10} 10$$

$$\Rightarrow \log_{10}[5(5x + 1)] = \log_{10}[10(x + 5)]$$

$$\Rightarrow 5(5x + 1) = 10(x + 5)$$

$$\Rightarrow 5x + 1 = 2x + 10$$

$$\Rightarrow 3x = 9$$

$$\Rightarrow x = 3.$$

10. The value of $\left(\dfrac{1}{\log_3 60} + \dfrac{1}{\log_4 60} + \dfrac{1}{\log_5 60}\right)$ is:

A.0 B.1
C.5 D.60

Answer & Explanation

Answer: Option **B**

Explanation:

Given expression $= \log_{60} 3 + \log_{60} 4 + \log_{60} 5$
$= \log_{60}(3 \times 4 \times 5)$
$= \log_{60} 60$
$= 1$.

11. If $\log 2 = 0.30103$, the number of digits in 2^{64} is:

A.18 B.19
C.20 D.21

Answer & Explanation

Answer: Option **C**

Explanation:

$$\log(2^{64}) = 64 \times \log 2$$
$$= (64 \times 0.30103)$$
$$= 19.26592$$

Its characteristic is 19.

Hence, then number of digits in 2^{64} is 20.

12. If $\log_x\left(\dfrac{9}{16}\right) = -\dfrac{1}{2}$, then x is equal to:

A.-$\dfrac{3}{4}$ B.$\dfrac{3}{4}$

C. $\frac{81}{256}$

D. $\frac{256}{81}$

Answer & Explanation

Answer: Option **D**

Explanation:

$\log_x \left(\frac{9}{16}\right) = -\frac{1}{2}$

$\Rightarrow x^{-1/2} = \frac{9}{16}$

$\Rightarrow \frac{1}{x} = \frac{9}{16}$

$\Rightarrow x = \frac{16}{9}$

$\Rightarrow x = \left(\frac{16}{9}\right)^2$

$\Rightarrow x = \frac{256}{81}$

---

13. If $a^x = b^y$, then:

A. $\log\frac{a}{b} = \frac{x}{y}$

B. $\frac{\log a}{\log b} = \frac{x}{y}$

C. $\frac{\log a}{\log b} = \frac{y}{x}$

D. None of these

Answer & Explanation

Answer: Option **C**

Explanation:

$a^x = b^y$

$\Rightarrow \log a^x = \log b^y$

$\Rightarrow x \log a = y \log b$

$\Rightarrow \frac{\log a}{\log b} = \frac{y}{x}.$

---

14. If $\log_x y = 100$ and $\log_2 x = 10$, then the value of y is:

A. 2^{10}

B. 2^{100}

C. 2^{1000}

D. 2^{10000}

Answer & Explanation

Answer: Option **C**

Explanation:

$\log_2 x = 10 \quad \Rightarrow \quad x = 2^{10}.$

$\therefore \log_x y = 100$

$\Rightarrow y = x^{100}$

$\Rightarrow y = (2^{10})^{100}$ [put value of x]

$\Rightarrow y = 2^{1000}.$

---

15. The value of $\log_2 16$ is:

A. $\frac{1}{8}$

B. 4

C. 8

D. 16

Answer & Explanation

Answer: Option **B**

Explanation:

Let $\log_2 16 = n$.

Then, $2^n = 16 = 2^4 \quad \Rightarrow \quad n = 4.$

$\therefore \log_2 16 = 4.$

---

23. Probability

1. Tickets numbered 1 to 20 are mixed up and then a ticket is drawn at random. What is the probability that the ticket drawn has a number which is a multiple of 3 or 5?

A. $\frac{1}{2}$

B. $\frac{2}{5}$

C. $\frac{8}{15}$

D. $\frac{9}{20}$

Answer & Explanation

Answer: Option **D**

Explanation:

Here, S = {1, 2, 3, 4, ..., 19, 20}.

Let E = event of getting a multiple of 3 or 5 = {3, 6 , 9, 12, 15, 18, 5, 10, 20}.

$\therefore$ P(E) $= \frac{n(E)}{n(S)} = \frac{9}{20}.$

---

2. A bag contains 2 red, 3 green and 2 blue balls. Two balls are drawn at random. What is the probability that none of the balls drawn is blue?

A. $\frac{10}{21}$

B. $\frac{11}{21}$

C. $\frac{2}{7}$

D. $\frac{5}{7}$

Answer & Explanation

Answer: Option **A**

Explanation:

Total number of balls = (2 + 3 + 2) = 7.

Let S be the sample space.

Then, $n(S)$= Number of ways of drawing 2 balls out of 7

$$= {}^7C_2$$
$$= \frac{(7 \times 6)}{(2 \times 1)}$$
$$= 21.$$

Let E = Event of drawing 2 balls, none of which is blue.

∴ $n(E)$ = Number of ways of drawing 2 balls out of (2 + 3) balls.

$$= {}^5C_2$$
$$= \frac{(5 \times 4)}{(2 \times 1)}$$
$$= 10.$$

∴ $P(E) = \frac{n(E)}{n(S)} = \frac{10}{21}.$

---

3. In a box, there are 8 red, 7 blue and 6 green balls. One ball is picked up randomly. What is the probability that it is neither red nor green?

A. $\frac{1}{3}$ B. $\frac{3}{4}$

C. $\frac{7}{19}$ D. $\frac{8}{21}$

E. $\frac{9}{21}$

Answer & Explanation

Answer: Option **A**

Explanation:

Total number of balls = (8 + 7 + 6) = 21.

Let E= event that the ball drawn is neither red nor green
= event that the ball drawn is blue.

∴ $n(E) = 7.$

∴ $P(E) = \frac{n(E)}{n(S)} = \frac{7}{21} = \frac{1}{3}.$

---

4. What is the probability of getting a sum 9 from two throws of a dice?

A. $\frac{1}{6}$ B. $\frac{1}{8}$

C. $\frac{1}{9}$ D. $\frac{1}{12}$

Answer & Explanation

Answer: Option **C**

Explanation:

In two throws of a die, $n(S) = (6 \times 6) = 36.$

Let E = event of getting a sum ={(3, 6), (4, 5), (5, 4), (6, 3)}.

∴ $P(E) = \frac{n(E)}{n(S)} = \frac{4}{36} = \frac{1}{9}.$

---

5. Three unbiased coins are tossed. What is the probability of getting at most two heads?

A. $\frac{3}{4}$ B. $\frac{1}{4}$

C. $\frac{3}{8}$ D. $\frac{7}{8}$

Answer & Explanation

Answer: Option **D**

Explanation:

Here S = {TTT, TTH, THT, HTT, THH, HTH, HHT, HHH}

Let E = event of getting at most two heads.

Then E = {TTT, TTH, THT, HTT, THH, HTH, HHT}.

∴ $P(E) = \frac{n(E)}{n(S)} = \frac{7}{8}.$

6. Two dice are thrown simultaneously. What is the probability of getting two numbers whose product is even?

A. $\frac{1}{2}$ B. $\frac{3}{4}$

C. $\frac{3}{8}$ D. $\frac{5}{16}$

Answer & Explanation

Answer: Option **B**

Explanation:

In a simultaneous throw of two dice, we have $n(S) = (6 \times 6) = 36.$

Then, E= {(1, 2), (1, 4), (1, 6), (2, 1), (2, 2), (2, 3), (2, 4), (2, 5), (2, 6), (3, 2), (3, 4),
(3, 6), (4, 1), (4, 2), (4, 3), (4, 4), (4, 5), (4, 6), (5, 2), (5, 4), (5, 6), (6, 1),
(6, 2), (6, 3), (6, 4), (6, 5), (6, 6)}

∴ $n(E) = 27.$

∴ $P(E) = n(E) = 27 = 3.$

7. In a class, there are 15 boys and 10 girls. Three students are selected at random. The probability that 1 girl and 2 boys are selected, is:

A. $\dfrac{21}{46}$

B. $\dfrac{25}{117}$

C. $\dfrac{1}{50}$

D. $\dfrac{3}{25}$

Answer & Explanation

Answer: Option **A**

Explanation:

Let S be the sample space and E be the event of selecting 1 girl and 2 boys.

Then, $n(S)$ = Number ways of selecting 3 students out of 25

$= {}^{25}C_3$ `

$= \dfrac{(25 \times 24 \times 23)}{(3 \times 2 \times 1)}$

$= 2300.$

$n(E) = ({}^{10}C_1 \times {}^{15}C_2)$

$= \left[10 \times \dfrac{(15 \times 14)}{(2 \times 1)} \right]$

$= 1050.$

$\therefore$ $P(E) = \dfrac{n(E)}{n(S)} = \dfrac{1050}{2300} = \dfrac{21}{46}.$

---

8. In a lottery, there are 10 prizes and 25 blanks. A lottery is drawn at random. What is the probability of getting a prize?

A. $\dfrac{1}{10}$

B. $\dfrac{2}{5}$

C. $\dfrac{2}{7}$

D. $\dfrac{5}{7}$

Answer & Explanation

Answer: Option **C**

Explanation:

P (getting a prize) $= \dfrac{10}{(10 + 25)} = \dfrac{10}{35} = \dfrac{2}{7}.$

---

9. From a pack of 52 cards, two cards are drawn together at random. What is the probability of both the cards being kings?

A. $\dfrac{1}{15}$

B. $\dfrac{25}{57}$

C. $\dfrac{35}{256}$

D. $\dfrac{1}{221}$

Answer & Explanation

Answer: Option **D**

Explanation:

Let S be the sample space.

Then, $n(S) = {}^{52}C_2 = \dfrac{(52 \times 51)}{(2 \times 1)} = 1326.$

Let E = event of getting 2 kings out of 4.

$\therefore$ $n(E) = {}^{4}C_2 = \dfrac{(4 \times 3)}{(2 \times 1)} = 6.$

$\therefore$ $P(E) = \dfrac{n(E)}{n(S)} = \dfrac{6}{1326} = \dfrac{1}{221}.$

---

10. Two dice are tossed. The probability that the total score is a prime number is:

A. $\dfrac{1}{6}$

B. $\dfrac{5}{12}$

C. $\dfrac{1}{2}$

D. $\dfrac{7}{9}$

Answer & Explanation

Answer: Option **B**

Explanation:

Clearly, $n(S) = (6 \times 6) = 36.$

Let E = Event that the sum is a prime number.

Then E = { (1, 1), (1, 2), (1, 4), (1, 6), (2, 1), (2, 3), (2, 5), (3, 2), (3, 4), (4, 1), (4, 3), (5, 2), (5, 6), (6, 1), (6, 5) }

$\therefore$ $n(E) = 15.$

$\therefore$ $P(E) = \dfrac{n(E)}{n(S)} = \dfrac{15}{36} = \dfrac{5}{12}.$

11. A card is drawn from a pack of 52 cards. The probability of getting a queen of club or a king of heart is:

A. $\dfrac{1}{13}$

B. $\dfrac{2}{13}$

C. $\dfrac{1}{26}$

D. $\dfrac{1}{52}$

Answer & Explanation

Answer: Option **C**

Explanation:

Here, $n(S) = 52.$

Let E = event of getting a queen of club or a king of heart.

Then, $n(E) = 2$.

$$\therefore P(E) = \frac{n(E)}{n(S)} = \frac{2}{52} = \frac{1}{26}.$$

---

12. A bag contains 4 white, 5 red and 6 blue balls. Three balls are drawn at random from the bag. The probability that all of them are red, is:

A. $\frac{1}{22}$ B. $\frac{3}{22}$

C. $\frac{2}{91}$ D. $\frac{2}{77}$

Answer & Explanation

Answer: Option **C**

Explanation:

Let S be the sample space.

Then, $n(S)$ = number of ways of drawing 3 balls out of 15

$= {}^{15}C_3$

$= \frac{(15 \times 14 \times 13)}{(3 \times 2 \times 1)}$

$= 455$.

Let E = event of getting all the 3 red balls.

$$\therefore n(E) = {}^5C_3 = {}^5C_2 = \frac{(5 \times 4)}{(2 \times 1)} = 10.$$

$$\therefore P(E) = \frac{n(E)}{n(S)} = \frac{10}{455} = \frac{2}{91}.$$

---

13. Two cards are drawn together from a pack of 52 cards. The probability that one is a spade and one is a heart, is:

A. $\frac{3}{20}$ B. $\frac{29}{34}$

C. $\frac{47}{100}$ D. $\frac{13}{102}$

Answer & Explanation

Answer: Option **D**

Explanation:

Let S be the sample space.

Then, $n(S) = {}^{52}C_2 = \frac{(52 \times 51)}{(2 \times 1)} = 1326$.

Let E = event of getting 1 spade and 1 heart.

$\therefore n(E)$ = number of ways of choosing 1 spade out of 13 and 1 heart out of 13

$= ({}^{13}C_1 \times {}^{13}C_1)$

$= (13 \times 13)$

$= 169$.

$$\therefore P(E) = \frac{n(E)}{n(S)} = \frac{169}{1326} = \frac{13}{102}.$$

---

14. One card is drawn at random from a pack of 52 cards. What is the probability that the card drawn is a face card (Jack, Queen and King only)?

A. $\frac{1}{13}$ B. $\frac{3}{13}$

C. $\frac{1}{4}$ D. $\frac{9}{52}$

Answer & Explanation

Answer: Option **B**

Explanation:

Clearly, there are 52 cards, out of which there are 12 face cards.

$$\therefore P \text{ (getting a face card)} = \frac{12}{52} = \frac{3}{13}.$$

---

15. A bag contains 6 black and 8 white balls. One ball is drawn at random. What is the probability that the ball drawn is white?

A. $\frac{3}{4}$ B. $\frac{4}{7}$

C. $\frac{1}{8}$ D. $\frac{3}{7}$

Answer & Explanation

Answer: Option **B**

Explanation:

Let number of balls = (6 + 8) = 14.

Number of white balls = 8.

P (drawing a white ball) $= \frac{8}{14} = \frac{4}{7}$.

24.Odd Man Out and Series

Directions to Solve

Find the odd man out.
1. 3, 5, 11, 14, 17, 21
   A. 21   B. 17
   C. 14   D. 3
   Answer & Explanation

Answer: Option **C**

Explanation:

Each of the numbers except 14 is an odd number.

The number '14' is the only EVEN number.

2. 8, 27, 64, 100, 125, 216, 343

   A. 27   B. 100

   C. 125   D. 343

   Answer & Explanation

Answer: Option **B**

Explanation:

The pattern is 2^3, 3^3, 4^3, 5^3, 6^3, 7^3. But, 100 is not a perfect cube.

3. 10, 25, 45, 54, 60, 75, 80

   A. 10   B. 45

   C. 54   D. 75

   Answer & Explanation

Answer: Option **C**

Explanation:

Each of the numbers except 54 is multiple of 5.

4. 396, 462, 572, 427, 671, 264

   A. 396   B. 427

   C. 671   D. 264

   Answer & Explanation

Answer: Option **B**

Explanation:

In each number except 427, the middle digit is the sum of other two.

5. 6, 9, 15, 21, 24, 28, 30

   A. 28   B. 21

   C. 24   D. 30

   Answer & Explanation

Answer: Option **A**

Explanation:

Each of the numbers except 28, is a multiple of 3.

6. 1, 4, 9, 16, 23, 25, 36

   A. 9   B. 23

   C. 25   D. 36

   Answer & Explanation

Answer: Option **B**

Explanation:

Each of the numbers except 23, is perfectsquare.

7. 1, 4, 9, 16, 20, 36, 49

   A. 1   B. 9

   C. 20   D. 49

   Answer & Explanation

Answer: Option **C**

Explanation:

The pattern is 1^2, 2^2, 3^2, 4^2, 5^2, 6^2, 7^2. But, instead of 5^2, it is 20 which to be turned out.

8. 2, 5, 10, 17, 26, 37, 50, 64

   A. 50   B. 26

   C. 37   D. 64

   Answer & Explanation

Answer: Option **D**

Explanation:

$(1*1)+1$, $(2*2)+1$, $(3*3)+1$, $(4*4)+1$, $(5*5)+1$, $(6*6)+1$, $(7*7)+1$, $(8*8)+1$

But, 64 is out of pattern.

9. 10, 14, 16, 18, 21, 24, 26

   A. 26   B. 24

   C. 21   D. 18

   Answer & Explanation

Answer: Option **C**

Explanation:

Each of the numbers except 21 is an even number.

10. 16, 25, 36, 72, 144, 196, 225

   A. 36   B. 72

   C. 196   D. 225

   Answer & Explanation

Answer: Option **B**

Explanation:

Each of the numbers except 72 is a perfect square.

11. 331, 482, 551, 263, 383, 362, 284

   A. 263   B. 383

   C. 331   D. 551

   Answer & Explanation

Answer: Option **B**

Explanation:

In each number except 383, the product of first and third digits is the middle one.

---

12. 835, 734, 642, 751, 853, 981, 532
    A.751   B.853
    C.981   D.532
    Answer & Explanation

Answer: Option **A**

Explanation:

In each number except 751, the difference of third and first digit is the middle one.

---

13. 41, 43, 47, 53, 61, 71, 73, 81
    A.61   B.71
    C.73   D.81
    Answer & Explanation

Answer: Option **D**

Explanation:

Each of the numbers except 81 is a prime number.

---

14. 3, 5, 7, 12, 17, 19
    A.19   B.17
    C.5   D.12
    Answer & Explanation

Answer: Option **D**

Explanation:

Each of the numbers is a prime number except 12.

Directions to Solve

Find out the wrong number in the given sequence of numbers.

1. 582, 605, 588, 611, 634, 617, 600
    A.634   B.611
    C.605   D.600
    Answer & Explanation

Answer: Option **A**

Explanation:

Alternatively 23 is added and 17 is subtracted from the terms. So, 634 is wrong.

---

2. 22, 33, 66, 99, 121, 279, 594
    A.33   B.121
    C.279   D.594
    Answer & Explanation

Answer: Option **C**

Explanation:

Each of the number except 279 is a multiple of 11.

---

3. 8, 13, 21, 32, 47, 63, 83
    A.47   B.63
    C.32   D.83
    Answer & Explanation

Answer: Option **A**

Explanation:

Go on adding 5, 8, 11, 14, 17, 20.

So, the number 47 is wrong and must be replaced by 46.

---

4. 1, 8, 27, 64, 124, 216, 343
    A.8   B.27
    C.64   D.124
    Answer & Explanation

Answer: Option **D**

Explanation:

The numbers are 1^3, 2^3, 3^3, 4^3 etc. So, 124 is wrong; it must have been 5^3 *i.e.,* 125.

---

5. 1, 2, 6, 15, 31, 56, 91
    A.31   B.91
    C.56   D.15
    Answer & Explanation

Answer: Option **B**

Explanation:

1, $1 + 1^2 = 2$, $2 + 2^2 = 6$, $6 + 3^2 = 15$, $15 + 4^2 = 31$, $31 + 5^2 = 56$, $56 + 6^2 = 92$

Last number of given series must be 92 not 91.

6. 52, 51, 48, 43, 34, 27, 16
   A.27   B.34
   C.43   D.48
   Answer & Explanation

   Answer: Option **B**

   Explanation:

   Subtract 1, 3, 5, 7, 9, 11 from successive numbers.

   So, 34 is wrong.

---

7. 4, 6, 8, 9, 10, 11, 12
   A.10   B.11
   C.12   D.9
   Answer & Explanation

   Answer: Option **B**

   Explanation:

   Each number is a composite number except 11.

---

8. 105, 85, 60, 30, 0, -45, -90
   A.0   B.85
   C.-45   D.60
   Answer & Explanation

   Answer: Option **A**

   Explanation:

   Subtract 20, 25, 30, 35, 40, 45 from successive numbers.

   So, 0 is wrong.

---

9. 5, 16, 6, 16, 7, 16, 9
   A.9   B.7
   C.6   D.None of these
   Answer & Explanation

   Answer: Option **A**

   Explanation:

   Terms at odd places are 5, 6, 7, 8 etc. and each term at even place is 16.

   So, 9 is wrong.

---

10. 125, 127, 130, 135, 142, 153, 165
    A.130   B.142
    C.153   D.165
    Answer & Explanation

Answer: Option **D**

Explanation:

Prime numbers 2, 3, 5, 7, 11, 13 are to be added successively.

So, 165 is wrong.

11. 46080, 3840, 384, 48, 24, 2, 1
    A.1   B.2
    C.24   D.384
    Answer & Explanation

    Answer: Option **C**

    Explanation:

    The terms are successively divided by 12, 10, 8, 6, ...etc.

    So, 24 is wrong, it should be 8 (48/6 = 8).

---

12. 6, 13, 18, 25, 30, 37, 40
    A.25   B.30
    C.37   D.40
    Answer & Explanation

    Answer: Option **D**

    Explanation:

    The differences between two successive terms from the beginning are 7, 5, 7, 5, 7, 5.

    So, 40 is wrong.

13. 36, 54, 18, 27, 9, 18.5, 4.5
    A.4.5   B.18.5
    C.54   D.18
    Answer & Explanation

    Answer: Option **B**

    Explanation:

    The terms are alternatively multiplied by 1.5 and divided by 3. However, 18.5 does not satisfy it.

---

14. 56, 72, 90, 110, 132, 150
    A.72   B.110
    C.132   D.150
    Answer & Explanation

    Answer: Option **D**

    Explanation:

The numbers are 7 x 8, 8 x 9, 9 x 10, 10 x 11, 11 x 12, 12 x 13.

So, 150 is wrong.

---

15. 25, 36, 49, 81, 121, 169, 225
   A.36   B.49
   C.121   D.169
   Answer & Explanation

   Answer: Option **A**

   Explanation:

   The numbers are squares of odd natural numbers, starting from 5 up to 15.

   So, 36 is wrong.

Directions to Solve

Insert the missing number.
1. 16, 33, 65, 131, 261, (....)
   A.523   B.521
   C.613   D.721
   Answer & Explanation

   Answer: Option **A**

   Explanation:

   Each number is twice the preceding one with 1 added or subtracted alternatively.

   So, the next number is $(2 \times 261 + 1) = 523$.

---

2. 10, 5, 13, 10, 16, 20, 19, (....)
   A.22   B.40
   C.38   D.23
   Answer & Explanation

   Answer: Option **B**

   Explanation:

   There are two series (10, 13, 16, 19) and (5, 10, 20, 40), one increasing by 3 and the other multiplied by 2.

---

3. 1, 4, 9, 16, 25, 36, 49, (....)
   A.54   B.56
   C.64   D.81
   Answer & Explanation

   Answer: Option **C**

Explanation:

Numbers are $1^2, 2^2, 3^2, 4^2, 5^2, 6^2, 7^2$.

So, the next number is $8^2 = 64$.

---

4. 2, 4, 12, 48, 240, (....)
   A.960   B.1440
   C.1080   D.1920
   Answer & Explanation

   Answer: Option **B**

   Explanation:

   Go on multiplying the given numbers by 2, 3, 4, 5, 6.

   So, the correct next number is 1440.

---

5. 8, 7, 11, 12, 14, 17, 17, 22, (....)
   A.27   B.20
   C.22   D.24
   Answer & Explanation

   Answer: Option **B**

   Explanation:

   Thre are two series (8, 11, 14, 17, 20) and (7, 12, 17, 22) increasing by 3 and 5 respectively.

6. 11, 13, 17, 19, 23, 29, 31, 37, 41, (....)
   A.43   B.47
   C.53   D.51
   Answer & Explanation

   Answer: Option **A**

   Explanation:

   Numbers are all primes. The next prime is 43.

---

7. 8, 24, 12, 36, 18, 54, (....)
   A.27   B.108
   C.68   D.72
   Answer & Explanation

   Answer: Option **A**

   Explanation:

   Numbers are alternatively multiplied by 3 and divided by 2.

   So, the next number $= 54 \div 2 = 27$.

8. 2, 6, 12, 20, 30, 42, 56, (....)
   A.61   B.64
   C.72   D.70
   Answer & Explanation

   Answer: Option **C**

   Explanation:

   The pattern is 1 x 2, 2 x 3, 3 x 4, 4 x 5, 5 x 6, 6 x 7, 7 x 8.

   So, the next number is 8 x 9 = 72.

9. 4, -8, 16, -32, 64, (....)
   A.128   B.-128
   C.192   D.-192
   Answer & Explanation

   Answer: Option **B**

   Explanation:

   Each number is the proceeding number multiplied by -2.

   So, the required number is -128.

10. 7, 26, 63, 124, 215, 342, (....)
    A.481   B.511
    C.391   D.421
    Answer & Explanation

    Answer: Option **B**

    Explanation:

    Numbers are $(2^3 - 1)$, $(3^3 - 1)$, $(4^3 - 1)$, $(5^3 - 1)$, $(6^3 - 1)$, $(7^3 - 1)$ etc.

    So, the next number is $(8^3 - 1) = (512 - 1) = 511$.

11. 5, 10, 13, 26, 29, 58, 61, (....)
    A.122   B.64
    C.125   D.128
    Answer & Explanation

    Answer: Option **A**

    Explanation:

    Numbers are alternatively multiplied by 2 and increased by 3.

    So, the missing number = 61 x 2 = 122.

12. 15, 31, 63, 127, 255, (....)
    A.513   B.511

C.517   D.523
Answer & Explanation

Answer: Option **B**

Explanation:

Each number is double the preceding one plus 1.

So, the next number is (255 x 2) + 1 = 511.

13. 1, 8, 27, 64, 125, 216, (....)
    A.354   B.343
    C.392   D.245
    Answer & Explanation

    Answer: Option **B**

    Explanation:

    Numbers are 1^3, 2^3, 3^3, 4^3, 5^3, 6^3.

    So, the missing number is $7^3 = 343$.

14. 3, 7, 6, 5, 9, 3, 12, 1, 15, (....)
    A.18   B.13
    C.-1   D.3
    Answer & Explanation

    Answer: Option **C**

    Explanation:

    There are two series, beginning respectively with 3 and 7. In one 3 is added and in another 2 is subtracted.

    The next number is 1 - 2 = -1.

Directions to Solve

Find out the wrong number in the series.
 1. 7, 8, 18, 57, 228, 1165, 6996
    A.8   B.18
    C.57   D.228
    E.1165
    Answer & Explanation

    Answer: Option **D**

    Explanation:

    Let the given numbers be A, B, C, D, E, F, G.

    Then, A, A x 1 + 1, B x 2 + 2, C x 3 + 3, D x 4 + 4, E x 5 + 5, F x 6 + 6 are

the required numbers.

Clearly, 228 is wrong.

---

2. 1, 1, 2, 6, 24, 96, 720
   A. 720   B. 96
   C. 24   D. 6
   E. 2
   Answer & Explanation

   Answer: Option **B**

   Explanation:

   Go on multiplying with 1, 2, 3, 4, 5, 6 to get next number.

   So, 96 is wrong.

---

3. 196, 169, 144, 121, 100, 80, 64
   A. 169   B. 144
   C. 121   D. 100
   E. 80
   Answer & Explanation

   Answer: Option **E**

   Explanation:

   Numbers must be $(14)^2$, $(13)^2$, $(12)^2$, $(11)^2$, $(10)^2$, $(9)^2$, $(8)^2$.

   So, 80 is wrong.

---

4. 445, 221, 109, 46, 25, 11, 4
   A. 221   B. 109
   C. 46   D. 25
   E. 11
   Answer & Explanation

   Answer: Option **C**

   Explanation:

   Go on subtracting 3 and dividing the result by 2 to obtain the next number.

   Clearly, 46 is wrong.

---

5. 190, 166, 145, 128, 112, 100, 91
   A. 100   B. 166
   C. 145   D. 128
   E. 112
   Answer & Explanation

   Answer: Option **D**

   Explanation:

   Go on subtracting 24, 21, 18, 15, 12, 9 from the numbers to get the next number.

   190 - 24 = 166
   166 - 21 = 145
   145 - 18 = 127 [Here, 128 is placed instead of 127]
   127 - 15 = 112
   112 - 12 = 100 ... and so on.

   Therefore, 128 is wrong.

6. 19, 26, 33, 46, 59, 74, 91
   A. 26   B. 33
   C. 46   D. 59
   E. 74
   Answer & Explanation

   Answer: Option **B**

   Explanation:

   Go on adding 7, 9, 11, 13, 15, 17 respectively to obtain the next number.

   So, 33 is wrong. It must be 35

---

7. 1, 3, 10, 21, 64, 129, 356, 777
   A. 10   B. 21
   C. 64   D. 129
   E. 356
   Answer & Explanation

   Answer: Option **E**

   Explanation:

   A x 2 + 1, B x 3 + 1, C x 2 + 1, D x 3 + 1 and so on.

   So, 356 is wrong.

---

8. 6, 12, 48, 100, 384, 768, 3072
   A. 768   B. 384
   C. 100   D. 48
   E. 12
   Answer & Explanation

   Answer: Option **C**

   Explanation:

   Each even term of the series is obtained by multiplying the previous term by 2.

2nd term = (1st term) x 2 = 6 x 2 = 12

4th term = (3rd term) x 2 = 48 x 2 = 96.

6th term = (5th term) x 2 = 384 x 2 =768.

∴ 4th term should be 96 instead of 100.

---

9. 40960, 10240, 2560, 640, 200, 40, 10
   A. 640   B. 40
   C. 200   D. 2560
   E. 10240
   Answer & Explanation

Answer: Option **C**

Explanation:

Go on dividing by 4 to get the next number.

So, 200 is wrong.

---

10. 3, 7, 15, 39, 63, 127, 255, 511
    A. 7   B. 15
    C. 39   D. 63
    E. 127
    Answer & Explanation

Answer: Option **C**

Explanation:

Go on multiplying 2 and adding 1 to get the next number.

So, 39 is wrong.

11. 64, 71, 80, 91, 104, 119, 135, 155
    A. 71   B. 80
    C. 104   D. 119
    E. 135
    Answer & Explanation

Answer: Option **E**

Explanation:

Go on adding 7, 9, 11, 13, 15, 17, 19 respectively to obtain the next number.

So, 135 is wrong.

---

12. 15, 16, 34, 105, 424, 2124, 12756
    A. 16   B. 34
    C. 105   D. 424
    E. 2124
    Answer & Explanation

Answer: Option **E**

Explanation:

2nd term = (1st term) x 1 + 1 = 15 x 1 + 1 = 16.

3rd term = (2nd term) x 2 + 2 = 16 x 2 + 2 = 34.

4th term = (3th term) x 3 + 3 = 34 x 3 + 3 = 105.

5th term = (4th term) x 4 + 4 = 105 x 4 + 4 = 424

6th term = (5th term) x 5 + 5 = 424 x 5 + 5 = 2125

∴ 6th term should 2125 instead of 2124.

---

13. 10, 26, 74, 218, 654, 1946, 5834
    A. 26   B. 74
    C. 218   D. 654
    E. 1946
    Answer & Explanation

Answer: Option **D**

Explanation:

2nd term = (1st term) x 3 - 4 = 10 x 3 - 4 = 26.

3rd term = (2nd term) x 3 - 4 = 26 x 3 - 4 = 74.

4th term = (3th term) x 3 - 4 = 74 x 3 - 4 = 218.

5th term = (4th term) x 3 - 4 = 218 x 3 - 4 = 650.

∴ 5th term must be 650 instead of 654.

---

14. 2880, 480, 92, 24, 8, 4, 4
    A. 480   B. 92
    C. 24   D. 8
    E. 4
    Answer & Explanation

Answer: Option **B**

Explanation:

Go on dividing by 6, 5, 4, 3, 2, 1 respectively to obtain the next number.

Clearly, 92 is wrong.

---

15. 3, 7, 15, 27, 63, 127, 255
    A. 7   B. 15
    C. 27   D. 63
    E. 127

Answer: Option **C**

Explanation:

Go on multiplying the number by 2 and adding 1 to it to get the next number.

So, 27 is wrong.

26.Height and Distance

1. Two ships are sailing in the sea on the two sides of a lighthouse. The angle of elevation of the top of the lighthouse is observed from the ships are 30° and 45° respectively. If the lighthouse is 100 m high, the distance between the two ships is:
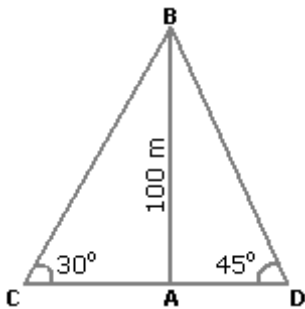
A.173 m   B.200 m
C.273 m   D.300 m
Answer & Explanation

Answer: Option **C**

Explanation:

Let AB be the lighthouse and C and D be the positions of the ships.

Then, AB = 100 m, $\angle$ACB = 30° and $\angle$ADB = 45°.

$\dfrac{AB}{AC}$ = tan 30° = $\dfrac{1}{3}$ $\Rightarrow$ AC = AB x 3 = 1003 m.

$\dfrac{AB}{AD}$ = tan 45° = 1 $\Rightarrow$ AD = AB = 100 m.

$\therefore$ CD = (AC + AD)= (1003 + 100) m
              = 100(3 + 1)
              = (100 x 2.73) m
              = 273 m.

2. A man standing at a point P is watching the top of a tower, which makes an angle of elevation of 30° with the man's eye. The man walks some distance towards the tower to watch its top and the angle of the elevation becomes 60°. What is the distance between the base of the tower and the point P?

A.43 units   B.8 units
C.12 units   D.Data inadequate
E.None of these
Answer & Explanation

Answer: Option **D**

Explanation:

One of AB, AD and CD must have given.
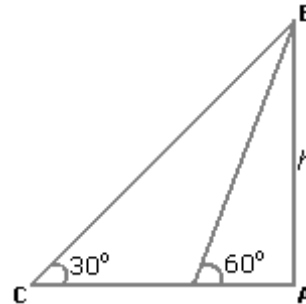
So, the data is inadequate.

3. The angle of elevation of a ladder leaning against a wall is 60° and the foot of the ladder is 4.6 m away from the wall. The length of the ladder is:
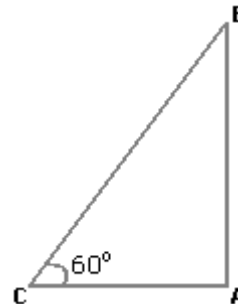
A.2.3 m   B.4.6 m
C.7.8 m   D.9.2 m
Answer & Explanation

Answer: Option **D**

Explanation:

Let AB be the wall and BC be the ladder.

Then, $\angle$ACB = 60° and AC = 4.6 m.

$\dfrac{AC}{BC}$ = cos 60° = $\dfrac{1}{2}$
$\Rightarrow$BC= 2 x AC
      = (2 x 4.6) m
      = 9.2 m.

4. An observer 1.6 m tall is 203 away from a tower. The angle of elevation from his eye to the top of the tower is 30°. The heights of the tower is:
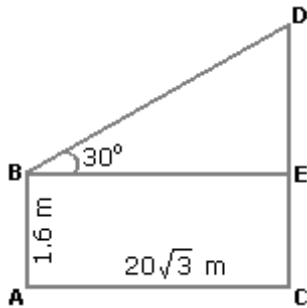
A. 21.6 m   B. 23.2 m
C. 24.72 m   D. None of these
Answer & Explanation

Answer: Option **A**

Explanation:

Let AB be the observer and CD be the tower.

Draw BE ⊥ CD.

Then, CE = AB = 1.6 m,

$\quad$ BE = AC = 203 m.

$$\frac{DE}{BE} = \tan 30^\circ = \frac{1}{3}$$

$$\Rightarrow DE = \frac{203}{3} \text{ m} = 20 \text{ m}.$$

∴ CD = CE + DE = (1.6 + 20) m = 21.6 m.

---

5. From a point P on a level ground, the angle of elevation of the top tower is 30º. If the tower is 100 m high, the distance of point P from the foot of the tower is:
A. 149 m   B. 156 m
C. 173 m   D. 200 m
Answer & Explanation

Answer: Option **C**

Explanation:

Let AB be the tower.
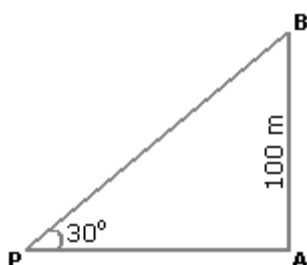
Then, ∠APB = 30º and AB = 100 m.

$$\frac{AB}{AP} = \tan 30^\circ = \frac{1}{3}$$

$$\Rightarrow AP = (AB \times 3) \text{ m}$$
$$= 1003 \text{ m}$$
$$= (100 \times 1.73) \text{ m}$$
$$= 173 \text{ m}.$$

The angle of elevation of the sun, when the length of the shadow of a tree 3 times the height of the tree, is:
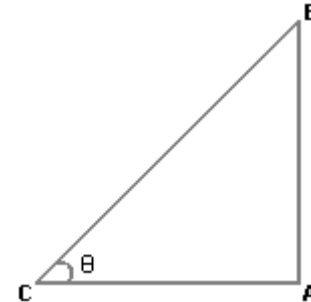A. 30º   B. 45º
C. 60º   D. 90º
Answer & Explanation
Answer: Option A
Explanation:
Let AB be the tree and AC be its shadow.

Let ∠ACB = θ.

Then, $\frac{AC}{AB} = 3 \quad \Rightarrow \quad \cot \theta = 3$

∴ θ = 30º.

27, Compound Interest

1. A bank offers 5% compound interest calculated on half-yearly basis. A customer deposits Rs. 1600 each on 1st January and 1st July of a year. At the end of the year, the amount he would have gained by way of interest is:
A. Rs. 120   B. Rs. 121
C. Rs. 122   D. Rs. 123
Answer & Explanation

Answer: Option **B**

Explanation:

$$\text{Amount} = \text{Rs.} \left[1600 \left(1 + \frac{\frac{5}{2}}{100} \right)^2 + 1600 \left(1 + \frac{\frac{5}{2}}{100} \right) \right]$$

$$= \text{Rs.} \left[1600 \times \frac{41}{40} \times \frac{41}{40} + 1600 \times \frac{41}{40} \right]$$

$$= \text{Rs.} \left[1600 \times \frac{41}{40} \left(\frac{41}{40} + 1 \right) \right]$$

$$= \text{Rs.} \left[\frac{1600 \times 41 \times 81}{40 \times 40} \right]$$

$$= \text{Rs. } 3321.$$

∴ C.I. = Rs. (3321 - 3200) = Rs. 121

---

2. The difference between simple and compound interests compounded annually on a certain sum of money for 2 years at 4% per annum is Re. 1. The sum (in Rs.) is:

A. 625   B. 630
C. 640   D. 650

Answer & Explanation

Answer: Option **A**

Explanation:

Let the sum be Rs. x. Then,

$$\text{C.I.} = \left[x\left(1 + \frac{4}{100}\right)^2 - x \right] = \left(\frac{676}{625}x - x\right) = \frac{51}{625}x.$$

$$\text{S.I.} = \left(\frac{x \times 4 \times 2}{100}\right) = \frac{2x}{25}.$$

$$\therefore \frac{51x}{625} - \frac{2x}{25} = 1$$

$$\Rightarrow x = 625.$$

---

3. There is 60% increase in an amount in 6 years at simple interest. What will be the compound interest of Rs. 12,000 after 3 years at the same rate?

A. Rs. 2160   B. Rs. 3120
C. Rs. 3972   D. Rs. 6240
E. None of these
Answer & Explanation

Answer: Option **C**

Explanation:

Let P = Rs. 100. Then, S.I. Rs. 60 and T = 6 years.

$$\therefore R = \left(\frac{100 \times 60}{100 \times 6}\right) = 10\% \text{ p.a.}$$

Now, P = Rs. 12000. T = 3 years and R = 10% p.a.

$$\therefore \text{C.I.} = \text{Rs.}\left[12000 \times \left\{ \left(1 + \frac{10}{100}\right)^3 - 1 \right\} \right]$$

$$= \text{Rs.}\left(12000 \times \frac{331}{1000} \right)$$

$$= 3972.$$

---

4. What is the difference between the compound interests on Rs. 5000 for $1\frac{1}{2}$ years at 4% per annum compounded yearly and half-yearly?

A. Rs. 2.04   B. Rs. 3.06
C. Rs. 4.80   D. Rs. 8.30
Answer & Explanation

Answer: Option **A**

Explanation:

C.I. when interest compounded yearly

$$= \text{Rs.}\left[5000\left(1 + \frac{4}{100}\right) \times \left(1 + \frac{\frac{1}{2}x \cdot 4}{100}\right) \right]$$

$$= \text{Rs.}\left(5000 \times \frac{26}{25} \times \frac{51}{50} \right)$$

$$= \text{Rs. } 5304.$$

C.I. when interest is compounded half-yearly

$$= \text{Rs.}\left[5000\left(1 + \frac{2}{100}\right)^3 \right]$$

$$= \text{Rs.}\left(5000 \times \frac{51}{50} \times \frac{51}{50} \times \frac{51}{50} \right)$$

$$= \text{Rs. } 5306.04$$

$$\therefore \text{Difference} = \text{Rs. } (5306.04 - 5304) = \text{Rs. } 2.04$$

---

5. The compound interest on Rs. 30,000 at 7% per annum is Rs. 4347. The period (in years) is:

A. 2   B. $2\frac{1}{2}$
C. 3   D. 4
Answer & Explanation

Answer: Option **A**

Explanation:

Amount = Rs. (30000 + 4347) = Rs. 34347.

Let the time be n years.

Then, $30000\left(1 + \frac{7}{100}\right)^n = 34347$

$$\Rightarrow \left(\frac{107}{100}\right)^n = \frac{34347}{30000} = \frac{11449}{10000} = \left(\frac{107}{100}\right)^2$$

$$\therefore n = 2 \text{ years.}$$

6. What will be the compound interest on a sum of Rs. 25,000 after 3 years at the rate of 12 p.c.p.a.?

A. Rs. 9000.30   B. Rs. 9720
C. Rs. 10123.20   D. Rs. 10483.20
E. None of these
Answer & Explanation

Answer: Option **C**

Explanation:

$$\text{Amount} = \text{Rs.}\left[25000\left(1 + \frac{12}{100}\right)^3 \right]$$

$$= \text{Rs.} \left(25000 \times \frac{28}{25} \times \frac{28}{25} \times \frac{28}{25} \right)$$

$$= \text{Rs. } 35123.20$$

$\therefore$ C.I. = Rs. (35123.20 - 25000) = Rs. 10123.20

7. At what rate of compound interest per annum will a sum of Rs. 1200 become Rs. 1348.32 in 2 years?
A.6%   B.6.5%
C.7%   D.7.5%
Answer & Explanation

Answer: Option **A**

Explanation:

Let the rate be R% p.a.

Then, $1200 \times \left(1 + \dfrac{R}{100}\right)^2 = 1348.32$

$\Rightarrow \left(1 + \dfrac{R}{100}\right)^2 = \dfrac{134832}{120000} = \dfrac{11236}{10000}$

$\therefore \left(1 + \dfrac{R}{100}\right)^2 = \left(\dfrac{106}{100}\right)^2$

$\Rightarrow 1 + \dfrac{R}{100} = \dfrac{106}{100}$

$\Rightarrow R = 6\%$

8. The least number of complete years in which a sum of money put out at 20% compound interest will be more than doubled is:
A.3   B.4
C.5   D.6
Answer & Explanation

Answer: Option **B**

Explanation:

$P \left(1 + \dfrac{20}{100}\right)^n > 2P \quad \Rightarrow \quad \left(\dfrac{6}{5}\right)^n > 2.$

Now, $\left(\dfrac{6}{5} \times \dfrac{6}{5} \times \dfrac{6}{5} \times \dfrac{6}{5}\right) > 2.$

So, $n = 4$ years.

9. Albert invested an amount of Rs. 8000 in a fixed deposit scheme for 2 years at compound interest rate 5 p.c.p.a. How much amount will Albert get on maturity of the fixed deposit?
A.Rs. 8600   B.Rs. 8620
C.Rs. 8820   D.None of these
Answer & Explanation

Answer: Option **C**

Explanation:

$$\text{Amount} = \text{Rs.} \left[8000 \times \left(1 + \dfrac{5}{100}\right)^2 \right]$$

$$= \text{Rs.} \left(8000 \times \dfrac{21}{20} \times \dfrac{21}{20} \right)$$

$$= \text{Rs. } 8820.$$

10. The effective annual rate of interest corresponding to a nominal rate of 6% per annum payable half-yearly is:
A.6.06%   B.6.07%
C.6.08%   D.6.09%
Answer & Explanation

Answer: Option **D**

Explanation:

Amount of Rs. 100 for 1 year when compounded half-yearly $= \text{Rs.} \left[100 \times \left(1 + \dfrac{3}{100}\right)^2 \right] = \text{Rs. } 106.09$

$\therefore$ Effective rate = (106.09 - 100)% = 6.09%

11. Simple interest on a certain sum of money for 3 years at 8% per annum is half the compound interest on Rs. 4000 for 2 years at 10% per annum. The sum placed on simple interest is:
A.Rs. 1550   B.Rs. 1650
C.Rs. 1750   D.Rs. 2000
Answer & Explanation

Answer: Option **C**

Explanation:

$$\text{C.I.} = \text{Rs.} \left[4000 \times \left(1 + \dfrac{10}{100}\right)^2 - 4000 \right]$$

$$= \text{Rs.} \left(4000 \times \dfrac{11}{10} \times \dfrac{11}{10} - 4000 \right)$$

$$= \text{Rs. } 840.$$

$\therefore$ Sum $= \text{Rs.} \left(\dfrac{420 \times 100}{3 \times 8} \right) = \text{Rs. } 1750.$

12. If the simple interest on a sum of money for 2 years at 5% per annum is Rs. 50, what is the compound interest on the same at the same rate and for the same time?
A.Rs. 51.25   B.Rs. 52
C.Rs. 54.25   D.Rs. 60
Answer & Explanation

Answer: Option **A**

Explanation:

$$\text{Sum} = \text{Rs.}\left(\frac{50 \times 100}{2 \times 5}\right) = \text{Rs. } 500.$$

$$\text{Amount} = \text{Rs.}\left[500 \times \left(1 + \frac{5}{100}\right)2\right]$$

$$= \text{Rs.}\left(500 \times \frac{21}{20} \times \frac{21}{20}\right)$$

$$= \text{Rs. } 551.25$$

$$\therefore \text{C.I.} = \text{Rs. } (551.25 - 500) = \text{Rs. } 51.25$$

---

13. The difference between simple interest and compound on Rs. 1200 for one year at 10% per annum reckoned half-yearly is:
A.Rs. 2.50   B.Rs. 3
C.Rs. 3.75   D.Rs. 4
E.None of these
Answer & Explanation

Answer: Option **B**

Explanation:

$$\text{S.I.} = \text{Rs}\left(\frac{1200 \times 10 \times 1}{100}\right) = \text{Rs. } 120.$$

$$\text{C.I.} = \text{Rs.}\left[1200 \times \left(1 + \frac{5}{100}\right)2 - 1200\right] = \text{Rs. } 123.$$

$$\therefore \text{Difference} = \text{Rs. } (123 - 120) = \text{Rs. } 3.$$

---

14. The difference between compound interest and simple interest on an amount of Rs. 15,000 for 2 years is Rs. 96. What is the rate of interest per annum?
A.8   B.10
C.12   D.Cannot be determined
E.None of these
Answer & Explanation

Answer: Option **A**

Explanation:

$$\left[15000 \times \left(1 + \frac{R}{100}\right)2 - 15000\right] - \left(\frac{15000 \times R \times 2}{100}\right) = 96$$

$$\Rightarrow 15000\left[\left(1 + \frac{R}{100}\right)2 - 1 - \frac{2R}{100}\right] = 96$$

$$\Rightarrow 15000\left[\frac{(100 + R)^2 - 10000 - (200 \times R)}{10000}\right] = 96$$

$$\Rightarrow R^2 = \left(\frac{96 \times 2}{3}\right) = 64$$

$$\Rightarrow R = 8.$$

$$\therefore \text{Rate} = 8\%.$$

---

15. The compound interest on a certain sum for 2 years at 10% per annum is Rs. 525. The simple interest on the same sum for double the time at half the rate percent per annum is:
A.Rs. 400   B.Rs. 500
C.Rs. 600   D.Rs. 800
Answer & Explanation

Answer: Option **B**

Explanation:

Let the sum be Rs. P.

$$\text{Then,}\left[P\left(1 + \frac{10}{100}\right)2 - P\right] = 525$$

$$\Rightarrow P\left[\left(\frac{11}{10}\right)2 - 1\right] = 525$$

$$\Rightarrow P = \left(\frac{525 \times 100}{21}\right) = 2500.$$

$$\therefore \text{Sum} = \text{Rs. } 2500.$$

$$\text{So, S.I.} = \text{Rs.}\left(\frac{2500 \times 5 \times 4}{100}\right) = \text{Rs. } 500$$

28.Percentage

1. A batsman scored 110 runs which included 3 boundaries and 8 sixes. What percent of his total score did he make by running between the wickets?

A.45% $B.45\frac{5}{11}\%$

$C.54\frac{6}{11}\%$ D.55%

Answer & Explanation

Answer: Option **B**

Explanation:

Number of runs made by running = 110 - (3 x 4 + 8 x 6)

= 110 - (60)

= 50.

$$\therefore \text{ Required percentage} = \left(\frac{50}{110} \times 100\right)\% = 45\frac{5}{11}\%$$

2. Two students appeared at an examination. One of them secured 9 marks more than the other and his marks was 56% of the sum of their marks. The marks obtained by them are:

A.39, 30   B.41, 32
C.42, 33   D.43, 34
Answer & Explanation

Answer: Option **C**

Explanation:

Let their marks be $(x + 9)$ and x.

Then, $x + 9 = \dfrac{56}{100}(x + 9 + x)$

$\Rightarrow 25(x + 9) = 14(2x + 9)$

$\Rightarrow 3x = 99$

$\Rightarrow x = 33$

So, their marks are 42 and 33.

3. A fruit seller had some apples. He sells 40% apples and still has 420 apples. Originally, he had:

A.588 apples   B.600 apples
C.672 apples   D.700 apples
Answer & Explanation

Answer: Option **D**

Explanation:

Suppose originally he had x apples.

Then, (100 - 40)% of x = 420.

$\Rightarrow \dfrac{60}{100} \times x = 420$

$\Rightarrow x = \left(\dfrac{420 \times 100}{60}\right) = 700.$

4. What percentage of numbers from 1 to 70 have 1 or 9 in the unit's digit?

A.1   B.14
C.20   D.21
Answer & Explanation

Answer: Option **C**

Explanation:

Clearly, the numbers which have 1 or 9 in the unit's digit, have squares that end in the digit 1. Such numbers from 1 to 70 are 1, 9, 11, 19, 21, 29, 31, 39, 41, 49, 51, 59, 61, 69.

Number of such number =14

$$\therefore \text{ Required percentage} = \left(\frac{14}{70} \times 100\right)\% = 20\%.$$

5. If A = x% of y and B = y% of x, then which of the following is true?

A.A is smaller than B.   B.A is greater than B
C.Relationship between A and B cannot be determined.   D.If x is smaller than y, then A is greater than B.
E.None of these
Answer & Explanation

Answer: Option **E**

Explanation:

$$x\% \text{ of } y = \left(\frac{x}{100} \times y\right) = \left(\frac{y}{100} \times x\right) = y\% \text{ of } x$$

$\therefore$ A = B.

6. If 20% of $a = b$, then b% of 20 is the same as:

A.4% of a B.5% of a
C.20% of a D.None of these
Answer & Explanation

Answer: Option **A**

Explanation:

20% of $a = b \implies \dfrac{20}{100}a = b.$

$\therefore b\%$ of $20 = \left(\dfrac{b}{100} \times 20\right) = \left(\dfrac{20}{100 \times} \dfrac{a}{100} \times \dfrac{1}{20} \times 20\right) = \dfrac{4}{100} a = 4\%$ of a.

7. In a certain school, 20% of students are below 8 years of age. The number of students above 8 years of age is $\frac{2}{3}$ of the number of students of 8 years of age which is 48. What is the total number of students in the school?

A.72   B.80
C.120   D.150
E.100
Answer & Explanation

Answer: Option **E**

Explanation:

Let the number of students be x. Then,

Number of students above 8 years of age = $(100 - 20)\%$ of x = 80% of x.

$\therefore$ 80% of x = $48 + \dfrac{2}{3}$ of 48

$\Rightarrow \dfrac{80}{100}x = 80$

$\Rightarrow x = 100$.

---

8. Two numbers A and B are such that the sum of 5% of A and 4% of B is two-third of the sum of 6% of A and 8% of B. Find the ratio of A : B.

A.2 : 3   B.1 : 1
C.3 : 4   D.4 : 3

Answer & Explanation

Answer: Option **D**

Explanation:

5% of A + 4% of B = $\dfrac{2}{3}$ (6% of A + 8% of B)

$\Rightarrow \dfrac{5}{100} A + \dfrac{4}{100} B = \dfrac{2}{3}\left(\dfrac{6}{100} A + \dfrac{8}{100} B\right)$

$\Rightarrow \dfrac{1}{20} A + \dfrac{1}{25} B = \dfrac{1}{25} A + \dfrac{4}{75} B$

$\Rightarrow \left(\dfrac{1}{20} - \dfrac{1}{25}\right) A = \left(\dfrac{4}{75} - \dfrac{1}{25}\right) B$

$\Rightarrow \dfrac{1}{100} A = \dfrac{1}{75} B$

$\dfrac{A}{B} = \dfrac{100}{75} = \dfrac{4}{3}.$

$\therefore$ Required ratio = 4 : 3

---

9. A student multiplied a number by $\dfrac{3}{5}$ instead of $\dfrac{5}{3}$.

What is the percentage error in the calculation?

A.34%   B.44%
C.54%   D.64%

Answer & Explanation

Answer: Option **D**

Explanation:

Let the number be x.

Then, error = $\dfrac{5}{3}x - \dfrac{3}{5}x = \dfrac{16}{15}x.$

Error% = $\left(\dfrac{16x}{15} \times \dfrac{3}{5x} \times 100\right)\% = 64\%.$

---

10. In an election between two candidates, one got 55% of the total valid votes, 20% of the votes were invalid. If the total number of votes was 7500, the number of valid votes that the other candidate got, was:

A.2700   B.2900
C.3000   D.3100

Answer & Explanation

Answer: Option **A**

Explanation:

Number of valid votes = 80% of 7500 = 6000.

$\therefore$ Valid votes polled by other candidate = 45% of 6000

$= \left(\dfrac{45}{100} \times 6000\right) = 2700.$

11. Three candidates contested an election and received 1136, 7636 and 11628 votes respectively. What percentage of the total votes did the winning candidate get?

A.57%   B.60%
C.65%   D.90%

Answer & Explanation

Answer: Option **A**

Explanation:

Total number of votes polled = (1136 + 7636 + 11628) = 20400.

$\therefore$ Required percentage = $\left(\dfrac{11628}{20400} \times 100\right)\% = 57\%.$

---

12. Two tailors X and Y are paid a total of Rs. 550 per week by their employer. If X is paid 120 percent of the sum paid to Y, how much is Y paid per week?

A.Rs. 200   B.Rs. 250
C.Rs. 300   D.None of these

Answer & Explanation

Answer: Option **B**

Explanation:

Let the sum paid to Y per week be Rs. z.

Then, $z + 120\%$ of $z = 550$.

$\Rightarrow z + 120z = 550$

$$100$$

$$\Rightarrow \frac{11}{5}z = 550$$

$$\Rightarrow z = \left(\frac{550 \times 5}{11} \right) = 250.$$

---

13. Gauri went to the stationers and bought things worth Rs. 25, out of which 30 paise went on sales tax on taxable purchases. If the tax rate was 6%, then what was the cost of the tax free items?

A.Rs. 15   B.Rs. 15.70
C.Rs. 19.70   D.Rs. 20
Answer & Explanation

Answer: Option **C**

Explanation:

Let the amount taxable purchases be Rs. x.

Then, 6% of $x = \dfrac{30}{100}$

$$\Rightarrow x = \left(\frac{30}{100} \times \frac{100}{6} \right) = 5.$$

∴ Cost of tax free items = Rs. [25 - (5 + 0.30)] = Rs. 19.70

---

14. Rajeev buys good worth Rs. 6650. He gets a rebate of 6% on it. After getting the rebate, he pays sales tax @ 10%. Find the amount he will have to pay for the goods.

A.Rs. 6876.10   B.Rs. 6999.20
C.Rs. 6654   D.Rs. 7000
Answer & Explanation

Answer: Option **A**

Explanation:

Rebate = 6% of Rs. 6650 = Rs. $\left(\dfrac{6}{100} \times 6650 \right)$ = Rs. 399.

Sales tax = 10% of Rs. (6650 - 399) = Rs. $\left(\dfrac{10}{100} \times 6251 \right)$ = Rs. 625.10

∴ Final amount = Rs. (6251 + 625.10) = Rs. 6876.10

---

15. The population of a town increased from 1,75,000 to 2,62,500 in a decade. The average percent increase of population per year is:

A.4.37%   B.5%
C.6%   D.8.75%
Answer & Explanation

Answer: Option **B**

Explanation:

Increase in 10 years = (262500 - 175000) = 87500.

Increase% = $\left(\dfrac{87500}{175000} \times 100 \right)$% = 50%.

∴ Required average = $\left(\dfrac{50}{10} \right)$% = 5%.

29.CLOCK

1. An accurate clock shows 8 o'clock in the morning. Through how may degrees will the hour hand rotate when the clock shows 2 o'clock in the afternoon?

A.144°   B.150°
C.168°   D.180°

Answer: Option **D**

Explanation:

Angle traced by the hour hand in 6 hours = $\left(\frac{360}{12} \times 6\right)° = 180°$.

---

2. The reflex angle between the hands of a clock at 10.25 is:

A.180°   B.$192\frac{1}{2}°$

C.195°   D.$197\frac{1}{2}°$

Answer: Option **D**

Explanation:

Angle traced by hour hand in $\frac{125}{12}$ hrs $= \left(\frac{360}{12} \times \frac{125}{12}\right)° = 312\frac{1}{2}°$.

Angle traced by minute hand in 25 min $= \left(\frac{360}{60} \times 25\right)° = 150°$.

∴ Reflex angle = $360° - \left(312\frac{1}{2} - 150\right)° = 360° - 162\frac{1}{2}° = 197\frac{1}{2}°$.

---

3. A clock is started at noon. By 10 minutes past 5, the hour hand has turned through:

A.145°   B.150°
C.155°   D.160°

Answer: Option **C**

Explanation:

Angle traced by hour hand in 12 hrs = 360°.

Angle traced by hour hand in 5 hrs 10 min. i.e., $\frac{31}{6}$ hrs $= \left(\frac{360}{12} \times \frac{31}{6}\right)° = 155°$.

---

4. A watch which gains 5 seconds in 3 minutes was set right at 7 a.m. In the afternoon of the same day, when the watch indicated quarter past 4 o'clock, the true time is:

A.$59\frac{7}{12}$min. past 3   B.4 p.m.

C.58 7 min. past 3   D.2 3 min. past 4

Answer: Option **B**

Explanation:

Time from 7 a.m. to 4.15 p.m. = 9 hrs 15 min. $= \frac{37}{4}$ hrs.

3 min. 5 sec. of this clock = 3 min. of the correct clock.

$\Rightarrow \frac{37}{720}$ hrs of this clock $= \frac{1}{20}$ hrs of the correct clock.

$\Rightarrow \frac{37}{4}$ hrs of this clock $= \left(\frac{1}{20} \times \frac{720}{37} \times \frac{37}{4}\right)$ hrs of the correct clock.

= 9 hrs of the correct clock.

∴ The correct time is 9 hrs after 7 a.m. i.e., 4 p.m.

---

5. How much does a watch lose per day, if its hands coincide every 64 minutes?

A.$32\frac{8}{11}$min.   B.$36\frac{5}{11}$min.
C.90 min.   D.96 min.

Answer: Option **A**

Explanation:

55 min. spaces are covered in 60 min.

60 min. spaces are covered in $\left(\frac{60}{55} \times 60\right)$ min. $= 65\frac{5}{11}$ min.

Loss in 64 min. $= \left(65\frac{5}{11} - 64\right) = \frac{16}{11}$ min.

Loss in 24 hrs $= \left(\frac{16}{11} \times \frac{1}{64} \times 24 \times 60\right)$ min. $= 32\frac{8}{11}$ min.

6. At what time between 7 and 8 o'clock will the hands of a clock be in the same straight line but, not together?

A.5 min. past 7   B.$5\frac{2}{11}$min. past 7

C.$5\frac{3}{11}$min. past 7   D.$5\frac{5}{11}$min. past 7

Answer: Option **D**

Explanation:

When the hands of the clock are in the same straight line but not together, they are 30 minute spaces apart.

At 7 o'clock, they are 25 min. spaces apart.

∴ Minute hand will have to gain only 5 min. spaces.

55 min. spaces are gained in 60 min.

5 min. spaces are gained in $\left(\dfrac{60}{55} \times 5\right)$ min. $= 5\dfrac{5}{11}$ min.

∴ Required time $= 5\dfrac{5}{11}$ min. past 7.

---

7. At what time between 5.30 and 6 will the hands of a clock be at right angles?

A. $43\dfrac{5}{11}$ min. past 5   B. $43\dfrac{7}{11}$ min. past 5

C. 40 min. past 5   D. 45 min. past 5

Answer & Explanation

Answer: Option **B**

Explanation:

At 5 o'clock, the hands are 25 min. spaces apart.

To be at right angles and that too between 5.30 and 6, the minute hand has to gain (25 + 15) = 40 min. spaces.

55 min. spaces are gained in 60 min.

40 min. spaces are gained in $\left(\dfrac{60}{55} \times 40\right)$ min. $= 43\dfrac{7}{11}$ min.

∴ Required time $= 43\dfrac{7}{11}$ min. past 5.

---

8. The angle between the minute hand and the hour hand of a clock when the time is 4.20, is:

A. 0°   B. 10°
C. 5°   D. 20°

Answer & Explanation

Answer: Option **B**

Explanation:

Angle traced by hour hand in $\dfrac{13}{3}$ hrs $= \left(\dfrac{360}{12} \times \dfrac{13}{3}\right)° = 130°$.

Angle traced by min. hand in 20 min. $\left(\dfrac{360}{60} \times \dfrac{x}{20}\right)° = 120°$.

∴ Required angle = (130 - 120)° = 10°.

---

9. At what angle the hands of a clock are inclined at 15 minutes past 5?

A. $58\dfrac{1}{2}$°   B. 64°

C. $67\dfrac{1}{2}$°   D. $72\dfrac{1}{2}$°

Answer & Explanation

Answer: Option **C**

Explanation:

Angle traced by hour hand in $\dfrac{21}{4}$ hrs $= \left(\dfrac{360}{12} \times \dfrac{21}{4}\right)° = 157\dfrac{1}{2}$°

Angle traced by min. hand in 15 min. $= \left(\dfrac{360}{60} \times 15\right)° = 90°$.

∴ Required angle $= \left(157\dfrac{1}{2}\right)° - 90° = 67\dfrac{1}{2}$°

---

10. At 3.40, the hour hand and the minute hand of a clock form an angle of:

A. 120°   B. 125°
C. 130°   D. 135°

Answer & Explanation

Answer: Option **C**

Explanation:

Angle traced by hour hand in 12 hrs. = 360°.

Angle traced by it in $\dfrac{11}{3}$ hrs $= \left(\dfrac{360}{12} \times \dfrac{11}{3}\right)° = 110°$.

Angle traced by minute hand in 60 min. = 360°.

Angle traced by it in 40 min. $= \left(\dfrac{360}{60} \times 40\right)° = 240°$.

∴ Required angle (240 - 110)° = 130°.

11. How many times are the hands of a clock at right angle in a day?

A. 22   B. 24
C. 44   D. 48

Answer & Explanation

Answer: Option **C**

Explanation:

In 12 hours, they are at right angles 22 times.

∴ In 24 hours, they are at right angles 44 times.

---

12. The angle between the minute hand and the hour hand of a clock when the time is 8.30, is:

A. 80°   B. 75°
C. 60°   D. 105°

Answer & Explanation

Answer: Option **B**

Explanation:

Angle traced by hour hand in $\frac{17}{2}$ hrs $= \left(\frac{360}{12} \times \frac{17}{2}\right)^\circ = 255$.

Angle traced by min. hand in 30 min. $= \left(\frac{360}{60} \times 30\right)^\circ = 180$.

$\therefore$ Required angle $= (255 - 180)^\circ = 75^\circ$.

---

13. How many times in a day, are the hands of a clock in straight line but opposite in direction?
    A. 20   B. 22
    C. 24   D. 48
    Answer & Explanation

Answer: Option **B**

Explanation:

The hands of a clock point in opposite directions (in the same straight line) 11 times in every 12 hours. (Because between 5 and 7 they point in opposite directions at 6 o'clcok only).

So, in a day, the hands point in the opposite directions 22 times.

---

14. At what time between 4 and 5 o'clock will the hands of a watch point in opposite directions?
    A. 45 min. past 4   B. 40 min. past 4
    C. $50\frac{4}{11}$ min. past 4   D. $54\frac{6}{11}$ min. past 4
    Answer & Explanation

Answer: Option **D**

Explanation:

At 4 o'clock, the hands of the watch are 20 min. spaces apart.

To be in opposite directions, they must be 30 min. spaces apart.

$\therefore$ Minute hand will have to gain 50 min. spaces.

55 min. spaces are gained in 60 min.

50 min. spaces are gained in $\left(\frac{60}{55} \times 50\right)$ min. or $54\frac{6}{11}$ min.

$\therefore$ Required time $= 54\frac{6}{11}$ min. past 4.

---

15. At what time between 9 and 10 o'clock will the hands of a watch be together?
    A. 45 min. past 9   B. 50 min. past 9
    C. $49\frac{1}{11}$ min. past 9   D. $48\frac{2}{11}$ min. past 9
    Answer & Explanation

Answer: Option **C**

Explanation:

To be together between 9 and 10 o'clock, the minute hand has to gain 45 min. spaces.

55 min. spaces gained in 60 min.

45 min. spaces are gained in $\left(\frac{60}{55} \times 45\right)$ min or $49\frac{1}{11}$ min.

$\therefore$ The hands are together at $49\frac{1}{11}$ min. past 9.

16. At what time, in minutes, between 3 o'clock and 4 o'clock, both the needles will coincide each other?
    A. $5\frac{1}{11}''$ B. $12\frac{4}{11}''$
    C. $13\frac{4}{11}''$ D. $16\frac{4}{11}''$
    Answer & Explanation

Answer: Option **D**

Explanation:

At 3 o'clock, the minute hand is 15 min. spaces apart from the hour hand.

To be coincident, it must gain 15 min. spaces.

55 min. are gained in 60 min.

15 min. are gained in $\left(\frac{60}{55} \times 15\right)_{min} = 16\frac{4}{11}$ min.

$\therefore$ The hands are coincident at $16\frac{4}{11}$ min. past 3.

---

17. How many times do the hands of a clock coincide in a day?
    A. 20   B. 21
    C. 22   D. 24
    Answer & Explanation

Answer: Option **C**

Explanation:

The hands of a clock coincide 11 times in every 12 hours (Since between 11 and 1, they coincide only once, *i.e.,* at 12 o'clock).

AM

12:00
1:05
2:11
3:16
4:22
5:27
6:33
7:38
8:44
9:49
10:55

PM

12:00
1:05
2:11
3:16
4:22
5:27
6:33
7:38
8:44
9:49
10:55

The hands overlap about every 65 minutes, not every 60 minutes.

∴ The hands coincide 22 times in a day.

---

18. How many times in a day, the hands of a clock are straight?
A.22   B.24
C.44   D.48
Answer & Explanation

Answer: Option **C**

Explanation:

In 12 hours, the hands coincide or are in opposite direction 22 times.

∴ In 24 hours, the hands coincide or are in opposite direction 44 times a day.

---

19. A watch which gains uniformly is 2 minutes low at noon on Monday and is 4 min. 48 sec fast at 2 p.m. on the following Monday. When was it correct?
A.2 p.m. on Tuesday   B.2 p.m. on Wednesday

C.3 p.m. on Thursday   D.1 p.m. on Friday
Answer & Explanation

Answer: Option **B**

Explanation:

Time from 12 p.m. on Monday to 2 p.m. on the following Monday = 7 days 2 hours = 170 hours.

∴ The watch gains $\left(2 + 4\frac{4}{5}\right)_{min.}$ or $\frac{34}{5}$ min. in 170 hrs.

Now, $\frac{34}{5}$ min. are gained in 170 hrs.

∴ 2 min. are gained in $\left(170 \times \frac{5}{34} \times 2\right)_{hrs}$ = 50 hrs.

∴ Watch is correct 2 days 2 hrs. after 12 p.m. on Monday *i.e.,* it will be correct at 2 p.m. on Wednesday.
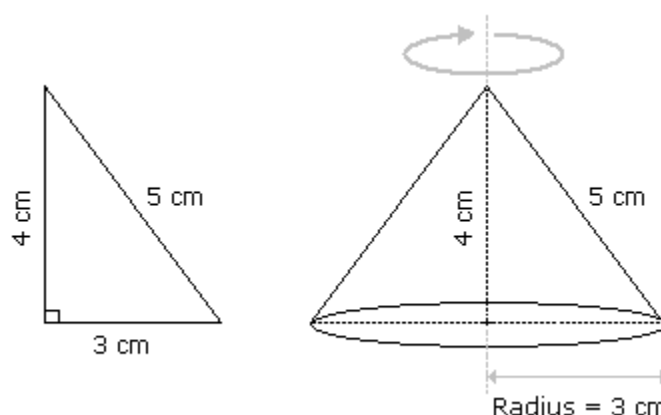

30.Volume and Surface Area

1. A right triangle with sides 3 cm, 4 cm and 5 cm is rotated the side of 3 cm to form a cone. The volume of the cone so formed is:
A.12 π cm^3 B.15 π cm^3
C.16 π cm^3 D.20 π cm^3
Answer & Explanation

Answer: Option **A**

Explanation:

Clearly, we have r = 3 cm and h = 4 cm.

∴ Volume = $\frac{1}{3}\pi r^2 h = \left(\frac{1}{3} \times \pi \times 3^2 \times 4\right)_{cm^3}$ = 12 π cm^3.

---

2. In a shower, 5 cm of rain falls. The volume of water that falls on 1.5 hectares of ground is:
A.75 cu. m   B.750 cu. m

C.7500 cu. m   D.75000 cu. m
Answer & Explanation

Answer: Option **B**

Explanation:

1 hectare = 10,000 m^2

So, Area = (1.5 x 10000) m^2 = 15000 m^2.

Depth $=\dfrac{5}{100}$m$=\dfrac{1}{20}$m.

∴ Volume = (Area x Depth) $=\left(15000 \text{ x}\dfrac{1}{20}\right)$m^3= 750 m^3.

---

3. A hall is 15 m long and 12 m broad. If the sum of the areas of the floor and the ceiling is equal to the sum of the areas of four walls, the volume of the hall is:
A.720   B.900
C.1200   D.1800
Answer & Explanation

Answer: Option **C**

Explanation:

2(15 + 12) x h = 2(15 x 12)

$\Rightarrow h =\dfrac{180}{27}$ m $=\dfrac{20}{3}$m.

∴ Volume $=\left(15 \text{ x } 12 \text{ x }\dfrac{20}{3}\right)$m^3= 1200 m^3.

---

4. 66 cubic centimetres of silver is drawn into a wire 1 mm in diameter. The length of the wire in metres will be:
A.84   B.90
C.168   D.336
Answer & Explanation

Answer: Option **A**

Explanation:

Let the length of the wire be h.

Radius $=\dfrac{1}{2}$mm$=\dfrac{1}{20}$cm.Then,

$\Rightarrow\dfrac{22}{7}$x$\dfrac{1}{20}$x$\dfrac{1}{20}$x h = 66.

$\Rightarrow h =\left(\dfrac{66 \text{ x } 20 \text{ x } 20 \text{ x } 7}{22}\right)$= 8400 cm = 84 m.

---

5. A hollow iron pipe is 21 cm long and its external diameter is 8 cm. If the thickness of the pipe is 1 cm and

iron weighs 8 g/cm^3, then the weight of the pipe is:
A.3.6 kg   B.3.696 kg
C.36 kg   D.36.9 kg
Answer & Explanation

Answer: Option **B**

Explanation:

External radius = 4 cm,

Internal radius = 3 cm.

Volume of iron$=\left(\dfrac{22}{7}\text{ x } [(4)^2 \text{ - } (3)^2] \text{ x } 21\right)$cm^3

$=\left(\dfrac{22}{7}\text{ x } 7 \text{ x } 1 \text{ x } 21\right)$cm^3

= 462 cm^3.

∴ Weight of iron = (462 x 8) gm = 3696 gm = 3.696 kg.

6. A boat having a length 3 m and breadth 2 m is floating on a lake. The boat sinks by 1 cm when a man gets on it. The mass of the man is:
A.12 kg   B.60 kg
C.72 kg   D.96 kg
Answer & Explanation

Answer: Option **B**

Explanation:

Volume of water displaced= (3 x 2 x 0.01) m^3
= 0.06 m^3.

∴ Mass of man = Volume of water displaced x Density of water
= (0.06 x 1000) kg
= 60 kg.

---

7. 50 men took a dip in a water tank 40 m long and 20 m broad on a religious day. If the average displacement of water by a man is 4 m^3, then the rise in the water level in the tank will be:
A.20 cm   B.25 cm
C.35 cm   D.50 cm
Answer & Explanation

Answer: Option **B**

Explanation:

Total volume of water displaced = (4 x 50) m^3 = 200 m^3.

∴ Rise in water level $=\left(\dfrac{200}{40 \text{ x } 20}\right)$m 0.25 m = 25 cm.

8. The slant height of a right circular cone is 10 m and its height is 8 m. Find the area of its curved surface.
A. 30π m^2　　　　　　　B. 40π m^2
C. 60π m^2　　　　　　　D. 80π m^2
Answer & Explanation

Answer: Option **C**

Explanation:

$l = 10$ m,

$h = 8$ m.

So, $r = l^2 - h^2 = (10)^2 - 8^2 = 6$ m.

$\therefore$ Curved surface area $= \pi r l = (\pi \times 6 \times 10)$ m^2 = 60π m^2.

---

9. A cistern 6m long and 4 m wide contains water up to a depth of 1 m 25 cm. The total area of the wet surface is:
A. 49 m^2　　　　　　　B. 50 m^2
C. 53.5 m^2　　　　　　D. 55 m^2
Answer & Explanation

Answer: Option **A**

Explanation:

Area of the wet surface	$= [2(lb + bh + lh) - lb]$
	$= 2(bh + lh) + lb$
	$= [2 (4 \times 1.25 + 6 \times 1.25) + 6 \times 4]$ m^2
	$= 49$ m^2.

---

10. A metallic sheet is of rectangular shape with dimensions 48 m x 36 m. From each of its corners, a square is cut off so as to make an open box. If the length of the square is 8 m, the volume of the box (in m^3) is:
A. 4830　　　　　　　B. 5120
C. 6420　　　　　　　D. 8960
Answer & Explanation

Answer: Option **B**

Explanation:

Clearly, $l = (48 - 16)$m $= 32$ m,

$b = (36 - 16)$m $= 20$ m,

$h = 8$ m.

$\therefore$ Volume of the box $= (32 \times 20 \times 8)$ m^3 = 5120 m^3.

11. The curved surface area of a cylindrical pillar is 264 m^2 and its volume is 924 m^3. Find the ratio of its diameter to its height.
A. 3 : 7　　　　　　　B. 7 : 3
C. 6 : 7　　　　　　　D. 7 : 6
Answer & Explanation

Answer: Option **B**

Explanation:

$$\frac{\pi r^2 h}{2 \pi r h} = \frac{924}{264} \quad \Rightarrow \quad r = \left(\frac{924}{264} \times 2\right) = 7 \text{ m.}$$

And, $2 \pi r h = 264 \quad \Rightarrow \quad h = \left(264 \times \frac{7}{22} \times \frac{1}{2} \times \frac{1}{7}\right) = 6$m.

$\therefore$ Required ratio $= \dfrac{2r}{h} = \dfrac{14}{6} = 7 : 3$.

---

12. A cistern of capacity 8000 litres measures externally 3.3 m by 2.6 m by 1.1 m and its walls are 5 cm thick. The thickness of the bottom is:
A. 90 cm　　　　　　　B. 1 dm
C. 1 m　　　　　　　　D. 1.1 cm
Answer & Explanation

Answer: Option **B**

Explanation:

Let the thickness of the bottom be x cm.

Then, $[(330 - 10) \times (260 - 10) \times (110 - x)] = 8000 \times 1000$

$\Rightarrow 320 \times 250 \times (110 - x) = 8000 \times 1000$

$\Rightarrow (110 - x) = \dfrac{8000 \times 1000}{320 \times 250} = 100$

$\Rightarrow x = 10$ cm $= 1$ dm.

---

13. What is the total surface area of a right circular cone of height 14 cm and base radius 7 cm?
A. 344.35 cm^2　　　　　　　B. 462 cm^2
C. 498.35 cm^2　　　　　　　D. None of these
Answer & Explanation

Answer: Option **C**

Explanation:

$h = 14$ cm, $r = 7$ cm.

So, $l = (7)^2 + (14)^2 = 245 = 75$ cm.

∴ Total surface area $= \Pi r l + \Pi r^2$

$$= \left(\frac{22}{7} \times 7 \times 75 + \frac{22}{7} \times 7 \times \frac{22}{7} \right) \text{cm}^2$$

$= [154(5 + 1)] \text{ cm}^2$

$= (154 \times 3.236) \text{ cm}^2$

$= 498.35 \text{ cm}^2$.

---

14. A large cube is formed from the material obtained by melting three smaller cubes of 3, 4 and 5 cm side. What is the ratio of the total surface areas of the smaller cubes and the large cube?

A. 2 : 1   B. 3 : 2

C. 25 : 18   D. 27 : 20

Answer & Explanation

Answer: Option **C**

Explanation:

Volume of the large cube $= (3^3 + 4^3 + 5^3) = 216 \text{ cm}^3$.

Let the edge of the large cube be a.

So, $a^3 = 216 \implies a = 6$ cm.

∴ Required ratio $= \left(\frac{6 \times (3^2 + 4^2 + 5^2)}{6 \times 6^2} \right) = \frac{50}{36} = 25 : 18$.

---

15. How many bricks, each measuring 25 cm x 11.25 cm x 6 cm, will be needed to build a wall of 8 m x 6 m x 22.5 cm?

A. 5600   B. 6000

C. 6400   D. 7200

Answer & Explanation

Answer: Option **C**

Explanation:

Number of bricks $= \dfrac{\text{Volume of the wall}}{\text{Volume of 1 brick}} = \left(\dfrac{800 \times 600 \times 22.5}{25 \times 11.25 \times 6} \right) = 6400$.

---

31. Problems on Numbers

1. If one-third of one-fourth of a number is 15, then three-tenth of that number is:

A. 35   B. 36

C. 45   D. 54

Answer & Explanation

Answer: Option **D**

Explanation:

Let the number be x.

Then, $\frac{1}{3}$ of $\frac{1}{4}$ of $x = 15 \iff x = 15 \times 12 = 180$.

So, required number $= \left(\frac{3}{10} \times 180 \right) = 54$.

---

2. Three times the first of three consecutive odd integers is 3 more than twice the third. The third integer is:

A. 9   B. 11

C. 13   D. 15

Answer & Explanation

Answer: Option **D**

Explanation:

Let the three integers be x, $x + 2$ and $x + 4$.

Then, $3x = 2(x + 4) + 3 \iff x = 11$.

∴ Third integer $= x + 4 = 15$.

---

3. The difference between a two-digit number and the number obtained by interchanging the positions of its digits is 36. What is the difference between the two digits of that number?

A. 3   B. 4

C. 9   D. Cannot be determined

E. None of these

Answer & Explanation

Answer: Option **B**

Explanation:

Let the ten's digit be x and unit's digit be y.

Then, $(10x + y) - (10y + x) = 36$

$\Rightarrow 9(x - y) = 36$

$\Rightarrow x - y = 4$.

---

4. The difference between a two-digit number and the number obtained by interchanging the digits is 36. What is the difference between the sum and the difference of the digits of the number if the ratio between the digits of the number is 1 : 2 ?

A. 4   B. 8

C. 16   D. None of these

Answer & Explanation

Answer: Option **B**

Explanation:

Since the number is greater than the number obtained on reversing the digits, so the ten's digit is greater than the unit's digit.

Let ten's and unit's digits be $2x$ and x respectively.

Then, $(10 \times 2x + x) - (10x + 2x) = 36$

$\Rightarrow 9x = 36$

$\Rightarrow x = 4.$

$\therefore$ Required difference $= (2x + x) - (2x - x) = 2x = 8.$

---

5. A two-digit number is such that the product of the digits is 8. When 18 is added to the number, then the digits are reversed. The number is:

A.18   B.24
C.42   D.81
Answer & Explanation

Answer: Option **B**

Explanation:

Let the ten's and unit digit be x and $\dfrac{8}{x}$ respectively.

Then, $\left(10x + \dfrac{8}{x}\right) + 18 = 10 \times \dfrac{8}{x} + x$

$\Rightarrow 10x^2 + 8 + 18x = 80 + x^2$

$\Rightarrow 9x^2 + 18x - 72 = 0$

$\Rightarrow x^2 + 2x - 8 = 0$

$\Rightarrow (x + 4)(x - 2) = 0$

$\Rightarrow x = 2.$

6. The sum of the digits of a two-digit number is 15 and the difference between the digits is 3. What is the two-digit number?

A.69   B.78
C.96   D.Cannot be determined
E.None of these
Answer & Explanation

Answer: Option **D**

Explanation:

Let the ten's digit be x and unit's digit be y.

Then, $x + y = 15$ and $x - y = 3$ or $y - x = 3$.

Solving $x + y = 15$ and $x - y = 3$, we get: $x = 9$, $y = 6$.

Solving $x + y = 15$ and $y - x = 3$, we get: $x = 6$, $y = 9$.

So, the number is either 96 or 69.

Hence, the number cannot be determined.

---

7. The sum of the squares of three numbers is 138, while the sum of their products taken two at a time is 131. Their sum is:
A.20   B.30
C.40   D.None of these
Answer & Explanation

Answer: Option **A**

Explanation:

Let the numbers be a, b and c.

Then, $a^2 + b^2 + c^2 = 138$ and $(ab + bc + ca) = 131$.

$(a + b + c)^2 = a^2 + b^2 + c^2 + 2(ab + bc + ca) = 138 + 2 \times 131 = 400.$

$\Rightarrow (a + b + c) = 400 = 20.$

---

8. A number consists of two digits. If the digits interchange places and the new number is added to the original number, then the resulting number will be divisible by:
A.3   B.5
C.9   D.11
Answer & Explanation

Answer: Option **D**

Explanation:

Let the ten's digit be x and unit's digit be y.

Then, number $= 10x + y$.

Number obtained by interchanging the digits $= 10y + x$.

$\therefore (10x + y) + (10y + x) = 11(x + y)$, which is divisible by 11.

---

9. In a two-digit, if it is known that its unit's digit exceeds its ten's digit by 2 and that the product of the given number and the sum of its digits is equal to 144, then the number is:
A.24   B.26
C.42   D.46

Answer & Explanation

Answer: Option **A**

Explanation:

Let the ten's digit be x.

Then, unit's digit $= x + 2$.

Number $= 10x + (x + 2) = 11x + 2$.

Sum of digits $= x + (x + 2) = 2x + 2$.

$\therefore (11x + 2)(2x + 2) = 144$

$\Rightarrow 22x^2 + 26x - 140 = 0$

$\Rightarrow 11x^2 + 13x - 70 = 0$

$\Rightarrow (x - 2)(11x + 35) = 0$

$\Rightarrow x = 2$.

Hence, required number $= 11x + 2 = 24$.

---

10. Find a positive number which when increased by 17 is equal to 60 times the reciprocal of the number.
    A.3   B.10
    C.17   D.20
    Answer & Explanation

Answer: Option **A**

Explanation:

Let the number be x.

Then, $x + 17 = \dfrac{60}{x}$

$\Rightarrow x^2 + 17x - 60 = 0$

$\Rightarrow (x + 20)(x - 3) = 0$

$\Rightarrow x = 3$.
$- (x- y)^2$

$= (25)^2 - (13)^2$

$= (625 - 169)$

$= 456$

$\therefore xy = 114$.

15. What is the sum of two consecutive even numbers, the difference of whose squares is 84?
    A.34   B.38
    C.42   D.46
    Answer & Explanation

Answer: Option **C**

Explanation:

Let the numbers be x and $x + 2$.

Then, $(x + 2)^2 - x^2 = 84$

$\Rightarrow 4x + 4 = 84$

$\Rightarrow 4x = 80$

$\Rightarrow x = 20$.

$\therefore$ The required sum $= x + (x + 2) = 2x + 2 = 42$.

32.Simplification

1. A man has Rs. 480 in the denominations of one-rupee notes, five-rupee notes and ten-rupee notes. The number of notes of each denomination is equal. What is the total number of notes that he has ?
    A.45   B.60
    C.75   D.90
    Answer & Explanation

Answer: Option **D**

Explanation:

Let number of notes of each denomination be x.

Then $x + 5x + 10x = 480$

$\Rightarrow 16x = 480$

$\therefore x = 30$.

Hence, total number of notes $= 3x = 90$.

---

2. There are two examinations rooms A and B. If 10 students are sent from A to B, then the number of students in each room is the same. If 20 candidates are sent from B to A, then the number of students in A is double the number of students in B. The number of students in room A is:
    A.20   B.80
    C.100   D.200

Answer: Option **C**

Explanation:

Let the number of students in rooms A and B be x and y respectively.

Then, $x - 10 = y + 10$ $\implies$ $x - y = 20$ .... (i)

and $x + 20 = 2(y - 20)$ $\implies$ $x - 2y = -60$ .... (ii)

Solving (i) and (ii) we get: $x = 100$, $y = 80$.

∴ The required answer A $= 100$.

---

3. The price of 10 chairs is equal to that of 4 tables. The price of 15 chairs and 2 tables together is Rs. 4000. The total price of 12 chairs and 3 tables is:
A.Rs. 3500   B.Rs. 3750
C.Rs. 3840   D.Rs. 3900
Answer & Explanation

Answer: Option **D**

Explanation:

Let the cost of a chair and that of a table be Rs. x and Rs. y respectively.

Then, $10x = 4y$ or $y = \frac{5}{2}x$.

∴ $15x + 2y = 4000$

$\implies 15x + 2 \times \frac{5}{2}x = 4000$

$\implies 20x = 4000$

∴ $x = 200$.

So, $y = \left(\frac{5}{2} \times 200\right) = 500$.

Hence, the cost of 12 chairs and 3 tables $= 12x + 3y$

$= $ Rs. $(2400 + 1500)$

$= $ Rs. 3900.

---

4. If $a - b = 3$ and $a^2 + b^2 = 29$, find the value of ab.
A.10   B.12
C.15   D.18

Answer & Explanation

Answer: Option **A**

Explanation:

$2ab = (a^2 + b^2) - (a - b)^2$

$= 29 - 9 = 20$

$\implies ab = 10$.

---

5. The price of 2 sarees and 4 shirts is Rs. 1600. With the same money one can buy 1 saree and 6 shirts. If one wants to buy 12 shirts, how much shall he have to pay ?
A.Rs. 1200   B.Rs. 2400
C.Rs. 4800   D.Cannot be determined
E.None of these
Answer & Explanation

Answer: Option **B**

Explanation:

Let the price of a saree and a shirt be Rs. x and Rs. y respectively.

Then, $2x + 4y = 1600$ .... (i)

and $x + 6y = 1600$ .... (ii)

Divide equation (i) by 2, we get the below equation.

$\Rightarrow x + 2y = 800$. --- (iii)

Now subtract (iii) from (ii)

$x + 6y = 1600$ (-)
$x + 2y = 800$

   $4y = 800$

Therefore, $y = 200$.

Now apply value of y in (iii)

$\Rightarrow x + 2 \times 200 = 800$

$\Rightarrow x + 400 = 800$

Therefore $x = 400$

Solving (i) and (ii) we get $x = 400$, $y = 200$.

∴ Cost of 12 shirts = Rs. (12 x 200) = Rs. 2400.

6. A sum of Rs. 1360 has been divided among A, B and C such that A gets $\frac{2}{3}$ of what B gets and B gets $\frac{1}{4}$ of what C gets. B's share is:

A.Rs. 120   B.Rs. 160
C.Rs. 240   D.Rs. 300

Answer & Explanation

Answer: Option **C**

Explanation:

Let C's share = Rs. x

Then, B's share = Rs. $\frac{x}{4}$,   A's share = Rs. $\left(\frac{2}{3} \times \frac{x}{4}\right)$ = Rs. $\frac{x}{6}$

∴ $\frac{x}{6} + \frac{x}{4} + x = 1360$

⟹ $\frac{17x}{12} = 1360$

⟹ $x = \frac{1360 \times 12}{17}$ = Rs. 960

Hence, B's share = Rs. $\left(\frac{960}{4}\right)$ = Rs. 240.

---

7. One-third of Rahul's savings in National Savings Certificate is equal to one-half of his savings in Public Provident Fund. If he has Rs. 1,50,000 as total savings, how much has he saved in Public Provident Fund ?

A.Rs. 30,000   B.Rs. 50,000
C.Rs. 60,000   D.Rs. 90,000

Answer & Explanation

Answer: Option **C**

Explanation:

Let savings in N.S.C and P.P.F. be Rs. x and Rs. (150000 - x) respectively. Then,

$\frac{1}{3}x = \frac{1}{2}(150000 - x)$

⟹ $\frac{x}{3} + \frac{x}{2} = 75000$

⟹ $\frac{5x}{6} = 75000$

⟹ $x = \frac{75000 \times 6}{5} = 90000$

∴ Savings in Public Provident Fund = Rs. (150000 - 90000) = Rs. 60000

---

8. A fires 5 shots to B's 3 but A kills only once in 3 shots while B kills once in 2 shots. When B has missed 27 times, A has killed:

A.30 birds   B.60 birds
C.72 birds   D.90 birds

Answer & Explanation

Answer: Option **A**

Explanation:

Let the total number of shots be x. Then,

Shots fired by A = $\frac{5}{8}x$

Shots fired by B = $\frac{3}{8}x$

Killing shots by A = $\frac{1}{3}$ of $\frac{5}{8}x = \frac{5}{24}x$

Shots missed by B = $\frac{1}{2}$ of $\frac{3}{8}x = \frac{3}{16}x$

∴ $\frac{3x}{16} = 27$ or $x = \left(\frac{27 \times 16}{3}\right) = 144$.

Birds killed by A = $\frac{5x}{24} = \left(\frac{5}{24} \times 144\right) = 30$.

---

9. Eight people are planning to share equally the cost of a rental car. If one person withdraws from the arrangement and the others share equally the entire cost of the car, then the share of each of the remaining persons increased by:

A.$\frac{1}{7}$ B.$\frac{1}{8}$
C.$\frac{1}{9}$ D.$\frac{7}{8}$

Answer & Explanation

Answer: Option **A**

Explanation:

Original share of 1 person = $\frac{1}{8}$

New share of 1 person = $\frac{1}{7}$

Increase = $\left(\frac{1}{7} - \frac{1}{8}\right) = \frac{1}{56}$

∴ Required fraction = $\frac{(1/56)}{(1/8)} = \left(\frac{1}{56} \times \frac{8}{1}\right) = \frac{1}{7}$

---

10. To fill a tank, 25 buckets of water is required. How many buckets of water will be required to fill the same tank if the capacity of the bucket is reduced to two-fifth of its present ?

A.10   B.35
C.62.5   D.Cannot be determined

Answer: Option **C**

Explanation:

Let the capacity of 1 bucket = x.

Then, the capacity of tank = $25x$.

New capacity of bucket $= \frac{2}{5}x$

∴ Required number of buckets $= \frac{25x}{(2x/5)}$

$$= \left(25x \times \frac{5}{2x} \right)$$

$$= \frac{125}{2}$$

$= 62.5$

11. In a regular week, there are 5 working days and for each day, the working hours are 8. A man gets Rs. 2.40 per hour for regular work and Rs. 3.20 per hours for overtime. If he earns Rs. 432 in 4 weeks, then how many hours does he work for ?
A.160   B.175
C.180   D.195
Answer & Explanation

Answer: Option **B**

Explanation:

Suppose the man works overtime for x hours.

Now, working hours in 4 weeks = (5 x 8 x 4) = 160.

∴ 160 x 2.40 + x x 3.20 = 432

$\Rightarrow$ 3.20x = 432 - 384 = 48

$\Rightarrow x$ = 15.

Hence, total hours of work = (160 + 15) = 175.

12. Free notebooks were distributed equally among children of a class. The number of notebooks each child got was one-eighth of the number of children. Had the number of children been half, each child would have got 16 notebooks. Total how many notebooks were distributed ?
A.256   B.432
C.512   D.640
E.None of these
Answer & Explanation

Answer: Option **C**

Explanation:

Let total number of children be x.

Then, $x \times \frac{1}{8}x = \frac{x}{2} \times 16 \iff x = 64$.

∴ Number of notebooks $= \frac{1}{8}x^2 = \left(\frac{1}{8} \times 64 \times 64 \right) = 512$.

13. A man has some hens and cows. If the number of heads be 48 and the number of feet equals 140, then the number of hens will be:
A.22   B.23
C.24   D.26
Answer & Explanation

Answer: Option **D**

Explanation:

Let the number of hens be x and the number of cows be y.

Then, $x + y = 48$ .... (i)

and $2x + 4y = 140 \implies x + 2y = 70$ .... (ii)

Solving (i) and (ii) we get: $x = 26$, $y = 22$.

∴ The required answer = 26.

14. $\dfrac{(469 + 174)^2 - (469 - 174)^2}{(469 \times 174)} = ?$
A.2   B.4
C.295   D.643
Answer & Explanation

Answer: Option **B**

Explanation:

Given exp. $= \dfrac{(a + b)^2 - (a - b)^2}{ab}$

$= \dfrac{4ab}{ab}$

$= 4$ (where $a = 469, b = 174$.)

15. David gets on the elevator at the 11th floor of a building and rides up at the rate of 57 floors per minute. At the same time, Albert gets on an elevator at the 51st floor of the same building and rides down at the rate of 63 floors per minute. If they continue travelling at these rates,

then at which floor will their paths cross ?

A.19   B.28
C.30   D.37
Answer & Explanation

Answer: Option **C**

Explanation:

Suppose their paths cross after x minutes.

Then, $11 + 57x = 51 - 63x \iff 120x = 40$

$$x = \frac{1}{3}$$

Number of floors covered by David in (1/3) min. $= \left(\frac{1}{3} \times \frac{x}{57}\right) = 19$.

So, their paths cross at $(11 + 19)$ *i.e.,* 30th floor.

33.Ratio and Proportion

1.
A and B together have Rs. 1210. If $\frac{4}{15}$ of A's amount is equal to $\frac{2}{5}$ of B's amount, how much amount does B have?

A.Rs. 460   B.Rs. 484
C.Rs. 550   D.Rs. 664
Answer & Explanation

Answer: Option **B**

Explanation:

$$\frac{4}{15}A = \frac{2}{5}B$$
$$\Rightarrow A = \left(\frac{2}{5} \times \frac{15}{4}\right)B$$
$$\Rightarrow A = \frac{3}{2}B$$
$$\Rightarrow \frac{A}{B} = \frac{3}{2}$$

$$\Rightarrow A : B = 3 : 2.$$

$\therefore$ B's share $=$ Rs. $\left(1210 \times \frac{2}{5}\right) =$ Rs. 484.

2. Two numbers are respectively 20% and 50% more than a third number. The ratio of the two numbers is:

A.2 : 5   B.3 : 5
C.4 : 5   D.6 : 7
Answer & Explanation

Answer: Option **C**

Explanation:

Let the third number be x.

Then, first number $= 120\%$ of $x = \frac{120x}{100} = \frac{6x}{5}$

Second number $= 150\%$ of $x = \frac{150x}{100} = \frac{3x}{2}$

$\therefore$ Ratio of first two numbers $= \left(\frac{6x}{5} : \frac{3x}{2}\right) = 12x : 15x = 4 : 5.$

---

3. A sum of money is to be distributed among A, B, C, D in the proportion of 5 : 2 : 4 : 3. If C gets Rs. 1000 more than D, what is B's share?

A.Rs. 500   B.Rs. 1500
C.Rs. 2000   D.None of these
Answer & Explanation

Answer: Option **C**

Explanation:

Let the shares of A, B, C and D be Rs. $5x$, Rs. $2x$, Rs. $4x$ and Rs. $3x$ respectively.

Then, $4x - 3x = 1000$

$$\Rightarrow x = 1000.$$

$\therefore$ B's share $=$ Rs. $2x =$ Rs. $(2 \times 1000) =$ Rs. 2000.

---

4. Seats for Mathematics, Physics and Biology in a school are in the ratio 5 : 7 : 8. There is a proposal to increase these seats by 40%, 50% and 75% respectively. What will be the ratio of increased seats?

A.2 : 3 : 4   B.6 : 7 : 8
C.6 : 8 : 9   D.None of these
Answer & Explanation

Answer: Option **A**

Explanation:

Originally, let the number of seats for Mathematics, Physics and Biology be $5x$, $7x$ and $8x$ respectively.

Number of increased seats are (140% of $5x$), (150% of $7x$) and (175% of $8x$).

$$\Rightarrow \left(\frac{140}{100} \times 5x\right), \left(\frac{150}{100} \times 7x\right) \text{ and } \left(\frac{175}{100} \times 8x\right)$$
$$\Rightarrow 7x, 21x \text{ and } 14x.$$

$$\therefore \text{ The required ratio} = 7x : \frac{21x}{2} : 14x$$

$$\Rightarrow 14x : 21x : 28x$$

$$\Rightarrow 2 : 3 : 4.$$

---

5. In a mixture 60 litres, the ratio of milk and water 2 : 1. If the this ratio is to be 1 : 2, then the quanity of water to be further added is:
   A. 20 litres   B. 30 litres
   C. 40 litres   D. 60 litres
   Answer & Explanation

   Answer: Option **D**

   Explanation:

   $$\text{Quantity of milk} = \left(60 \times \frac{2}{3}\right)\text{litres} = 40 \text{ litres.}$$

   Quantity of water in it = (60- 40) litres = 20 litres.

   New ratio = 1 : 2

   Let quantity of water to be added further be x litres.

   $$\text{Then, milk : water} = \left(\frac{40}{20 + x}\right).$$

   $$\text{Now,} \left(\frac{40}{20 + x}\right) = \frac{1}{2}$$

   $$\Rightarrow 20 + x = 80$$

   $$\Rightarrow x = 60.$$

   $\therefore$ Quantity of water to be added = 60 litres.

6. The ratio of the number of boys and girls in a college is 7 : 8. If the percentage increase in the number of boys and girls be 20% and 10% respectively, what will be the new ratio?
   A. 8 : 9   B. 17 : 18
   C. 21 : 22   D. Cannot be determined
   Answer & Explanation

   Answer: Option **C**

   Explanation:

   Originally, let the number of boys and girls in the college be $7x$ and $8x$ respectively.

   Their increased number is (120% of $7x$) and (110% of $8x$).

$$\Rightarrow \left(\frac{120}{100} \times 7x\right) \text{and} \left(\frac{110}{100} \times 8x\right)$$

$$\Rightarrow \frac{42x}{5} \text{and} \frac{44x}{5}$$

$$\therefore \text{ The required ratio} = \left(\frac{42x}{5} : \frac{44x}{5}\right) = 21 : 22.$$

---

7. Salaries of Ravi and Sumit are in the ratio 2 : 3. If the salary of each is increased by Rs. 4000, the new ratio becomes 40 : 57. What is Sumit's salary?
   A. Rs. 17,000   B. Rs. 20,000
   C. Rs. 25,500   D. Rs. 38,000
   Answer & Explanation

   Answer: Option **D**

   Explanation:

   Let the original salaries of Ravi and Sumit be Rs. $2x$ and Rs. $3x$ respectively.

   $$\text{Then,} \frac{2x + 4000}{3x + 4000} = \frac{40}{57}$$

   $$\Rightarrow 57(2x + 4000) = 40(3x + 4000)$$

   $$\Rightarrow 6x = 68,000$$

   $$\Rightarrow 3x = 34,000$$

   Sumit's present salary = $(3x + 4000)$ = Rs.$(34000 + 4000)$ = Rs. 38,000.

---

8. If $0.75 : x :: 5 : 8$, then x is equal to:
   A. 1.12   B. 1.2
   C. 1.25   D. 1.30
   Answer & Explanation

   Answer: Option **B**

   Explanation:

   $$(x \times 5) = (0.75 \times 8) \Rightarrow x = \left(\frac{6}{5}\right) = 1.20$$

---

9. The sum of three numbers is 98. If the ratio of the first to second is 2 :3 and that of the second to the third is 5 : 8, then the second number is:
   A. 20   B. 30
   C. 48   D. 58
   Answer & Explanation

   Answer: Option **B**

   Explanation:

Let the three parts be A, B, C. Then,

$$A : B = 2 : 3 \text{ and } B : C = 5 : 8 = \left(5 \times \frac{3}{5}\right) : \left(8 \times \frac{3}{5}\right) = 3 : \frac{24}{5}$$

$$\Rightarrow A : B : C = 2 : 3 : \frac{24}{5} = 10 : 15 : 24$$

$$\Rightarrow B = \left(98 \times \frac{15}{49}\right) = 30.$$

10.
If Rs. 782 be divided into three parts, proportional to $\frac{1}{2} : \frac{2}{3} : \frac{3}{4}$, then the first part is:

A.Rs. 182   B.Rs. 190
C.Rs. 196   D.Rs. 204
Answer & Explanation

Answer: Option **D**

Explanation:

Given ratio $= \frac{1}{2} : \frac{2}{3} : \frac{3}{4} = 6 : 8 : 9$.

$$\therefore 1^{\text{st}} \text{ part} = \text{Rs.} \left(782 \times \frac{6}{23}\right) = \text{Rs. } 204$$

11. The salaries A, B, C are in the ratio 2 : 3 : 5. If the increments of 15%, 10% and 20% are allowed respectively in their salaries, then what will be new ratio of their salaries?

A.3 : 3 : 10   B.10 : 11 : 20
C.23 : 33 : 60   D.Cannot be determined
Answer & Explanation

Answer: Option **C**

Explanation:

Let A = 2k, B = 3k and C = 5k.

A's new salary $= \frac{115}{100}$ of $2k = \left(\frac{115}{100} \times 2k\right) = \frac{23k}{10}$

B's new salary $= \frac{110}{100}$ of $3k = \left(\frac{110}{100} \times 3k\right) = \frac{33k}{10}$

C's new salary $= \frac{120}{100}$ of $5k = \left(\frac{120}{100} \times 5k\right) = 6k$

$$\therefore \text{ New ratio } \left(\frac{23k}{10} : \frac{33k}{10} : 6k\right) = 23 : 33 : 60$$

---

12. If 40% of a number is equal to two-third of another number, what is the ratio of first number to the second number?

A.2 : 5   B.3 : 7
C.5 : 3   D.7 : 3
Answer & Explanation

Answer: Option **C**

Explanation:

Let 40% of A $= \frac{2}{3}B$

Then, $\frac{40A}{100} = \frac{2B}{3}$

$$\Rightarrow \frac{2A}{5} = \frac{2B}{3}$$

$$\Rightarrow \frac{A}{B} = \left(\frac{2}{3} \times \frac{5}{2}\right) = \frac{5}{3}$$

$$\therefore A : B = 5 : 3.$$

---

13. The fourth proportional to 5, 8, 15 is:

A.18   B.24
C.19   D.20
Answer & Explanation

Answer: Option **B**

Explanation:

Let the fourth proportional to 5, 8, 15 be x.

Then, $5 : 8 : 15 : x$

$$\Rightarrow 5x = (8 \times 15)$$

$$x = \frac{(8 \times 15)}{5} = 24.$$

---

14. Two number are in the ratio 3 : 5. If 9 is subtracted from each, the new numbers are in the ratio 12 : 23. The smaller number is:

A.27   B.33
C.49   D.55
Answer & Explanation

Answer: Option **B**

Explanation:

Let the numbers be $3x$ and $5x$.

Then, $\frac{3x - 9}{5x - 9} = \frac{12}{23}$

$$\Rightarrow 23(3x - 9) = 12(5x - 9)$$

$$\Rightarrow 9x = 99$$

$$\Rightarrow x = 11.$$

∴ The smaller number = (3 x 11) = 33.

15. In a bag, there are coins of 25 p, 10 p and 5 p in the ratio of 1 : 2 : 3. If there is Rs. 30 in all, how many 5 p coins are there?
A.50   B.100
C.150   D.200
Answer & Explanation

Answer: Option **C**

Explanation:

Let the number of 25 p, 10 p and 5 p coins be x, $2x$, $3x$ respectively.

Then, sum of their values = Rs. $\left(\dfrac{25x}{100} + \dfrac{10 \text{ x } 2x}{100} + \dfrac{5 \text{ x } 3x}{100}\right)$ Rs. = $\dfrac{60x}{100}$

∴ $\dfrac{60x}{100} = 30 \Leftrightarrow x = \dfrac{30 \text{ x } 100}{60} = 50.$

Hence, the number of 5 p coins = (3 x 50) = 150.

34. Boats and Streams

1. A boat can travel with a speed of 13 km/hr in still water. If the speed of the stream is 4 km/hr, find the time taken by the boat to go 68 km downstream.
A.2 hours   B.3 hours
C.4 hours   D.5 hours
Answer & Explanation

Answer: Option **C**

Explanation:

Speed downstream = (13 + 4) km/hr = 17 km/hr.

Time taken to travel 68 km downstream = $\left(\dfrac{68}{17}\right)$ hrs = 4 hrs.

2. A man's speed with the current is 15 km/hr and the speed of the current is 2.5 km/hr. The man's speed against the current is:
A.8.5 km/hr   B.9 km/hr
C.10 km/hr   D.12.5 km/hr
Answer & Explanation

Answer: Option **C**

Explanation:

Man's rate in still water = (15 - 2.5) km/hr = 12.5 km/hr.

Man's rate against the current = (12.5 - 2.5) km/hr = 10 km/hr.

3. A boat running upstream takes 8 hours 48 minutes to cover a certain distance, while it takes 4 hours to cover the same distance running downstream. What is the ratio between the speed of the boat and speed of the water current respectively?
A.2 : 1   B.3 : 2
C.8 : 3   D.Cannot be determined
E.None of these
Answer & Explanation

Answer: Option **C**

Explanation:

Let the man's rate upstream be x kmph and that downstream be y kmph.

Then, distance covered upstream in 8 hrs 48 min = Distance covered downstream in 4 hrs.

$$\Rightarrow \left(x \text{ x } 8\dfrac{4}{5}\right) = (y \text{ x } 4)$$

$$\Rightarrow \dfrac{44}{5}x = 4y$$

$$\Rightarrow y = \dfrac{11}{5}x.$$

∴ Required ratio = $\left(\dfrac{y+x}{2}\right) : \left(\dfrac{y-x}{2}\right)$

$$= \left(\dfrac{16x}{5} \text{ x } \dfrac{1}{2}\right) : \left(\dfrac{6x}{5} \text{ x } \dfrac{1}{2}\right)$$

$$= \dfrac{8}{5} : \dfrac{3}{5}$$

= 8 : 3.

4. A motorboat, whose speed in 15 km/hr in still water goes 30 km downstream and comes back in a total of 4 hours 30 minutes. The speed of the stream (in km/hr) is:
A.4   B.5
C.6   D.10
Answer & Explanation

Answer: Option **B**

Explanation:

Let the speed of the stream be x km/hr. Then,

Speed downstream = (15 + x) km/hr,

Speed upstream = (15 - x) km/hr.

∴ $\dfrac{30}{}$ + $\dfrac{30}{}$ = 41

$(15 + x)$ $(15 - x)$ 2

$$\Rightarrow \frac{900}{225 - x^2} = \frac{9}{2}$$

$$\Rightarrow 9x^2 = 225$$

$$\Rightarrow x^2 = 25$$

$$\Rightarrow x = 5 \text{ km/hr.}$$

---

5. In one hour, a boat goes 11 km/hr along the stream and 5 km/hr against the stream. The speed of the boat in still water (in km/hr) is:

A.3 km/hr   B.5 km/hr
C.8 km/hr   D.9 km/hr
Answer & Explanation

Answer: Option **C**

Explanation:

Speed in still water $= \frac{1}{2}(11 + 5)$ kmph = 8 kmph.

6. A boat running downstream covers a distance of 16 km in 2 hours while for covering the same distance upstream, it takes 4 hours. What is the speed of the boat in still water?

A.4 km/hr   B.6 km/hr
C.8 km/hr   D.Data inadequate
Answer & Explanation

Answer: Option **B**

Explanation:

Rate downstream $= \left(\frac{16}{2}\right)$ kmph = 8 kmph.

Rate upstream $= \left(\frac{16}{4}\right)$ kmph = 4 kmph.

$\therefore$ Speed in still water $= \frac{1}{2}(8 + 4)$ kmph = 6 kmph.

---

7. The speed of a boat in still water in 15 km/hr and the rate of current is 3 km/hr. The distance travelled downstream in 12 minutes is:

A.1.2 km   B.1.8 km
C.2.4 km   D.3.6 km
Answer & Explanation

Answer: Option **D**

Explanation:

Speed downstream = (15 + 3) kmph = 18 kmph.

Distance travelled $= \left(18 \times \frac{12}{60}\right)$

8. A boat takes 90 minutes less to travel 36 miles downstream than to travel the same distance upstream. If the speed of the boat in still water is 10 mph, the speed of the stream is:

A.2 mph   B.2.5 mph
C.3 mph   D.4 mph
Answer & Explanation

Answer: Option **A**

Explanation:

Let the speed of the stream x mph. Then,

Speed downstream $= (10 + x)$ mph,

Speed upstream $= (10 - x)$ mph.

$$\therefore \frac{36}{(10 - x)} - \frac{36}{(10 + x)} = \frac{90}{60}$$

$$\Rightarrow 72x \times 60 = 90\,(100 - x^2)$$

$$\Rightarrow x^2 + 48x - 100 = 0$$

$$\Rightarrow (x + 50)(x - 2) = 0$$

$$\Rightarrow x = 2 \text{ mph.}$$

---

9. A man can row at 5 kmph in still water. If the velocity of current is 1 kmph and it takes him 1 hour to row to a place and come back, how far is the place?

A.2.4 km   B.2.5 km
C.3 km   D.3.6 km
Answer & Explanation

Answer: Option **A**

Explanation:

Speed downstream = (5 + 1) kmph = 6 kmph.

Speed upstream = (5 - 1) kmph = 4 kmph.

Let the required distance be x km.

Then, $\frac{x}{6} + \frac{x}{4} = 1$

$$\Rightarrow 2x + 3x = 12$$

$$\Rightarrow 5x = 12$$

$$\Rightarrow x = 2.4 \text{ km.}$$

10. A boat covers a certain distance downstream in 1 hour, while it comes back in $1\frac{1}{2}$ hours. If the speed of the stream be 3 kmph, what is the speed of the boat in still water?

A.12 kmph　　　　　　　B.13 kmph
C.14 kmph　　　　　　　D.15 kmph
E.None of these
Answer & Explanation

Answer: Option **D**

Explanation:

Let the speed of the boat in still water be x kmph. Then,

Speed downstream = $(x + 3)$ kmph,

Speed upstream = $(x - 3)$ kmph.

$\therefore (x + 3) \times 1 = (x - 3) \times \frac{3}{2}$

$\Rightarrow 2x + 6 = 3x - 9$

$\Rightarrow x = 15$ kmph.

11. A boatman goes 2 km against the current of the stream in 1 hour and goes 1 km along the current in 10 minutes. How long will it take to go 5 km in stationary water?

A.40 minutes　　　　　　B.1 hour
C.1 hr 15 min　　　　　　D.1 hr 30 min
Answer & Explanation

Answer: Option **C**

Explanation:

Rate downstream = $\left(\frac{1}{10} \times 60\right)$ km/hr = 6 km/hr.

Rate upstream = 2 km/hr.

Speed in still water = $\frac{1}{2}(6 + 2)$ km/hr = 4 km/hr.

$\therefore$ Required time = $\left(\frac{5}{4}\right)$ hrs = $1\frac{1}{4}$ hrs = 1 hr 15 min.

12. A man can row three-quarters of a kilometre against the stream in $11\frac{1}{4}$ minutes and down the stream in $7\frac{1}{2}$ minutes. The speed (in km/hr) of the man in still water is:

A.2　　　　　　　　　　B.3
C.4　　　　　　　　　　D.5
Answer & Explanation

Answer: Option **D**

Explanation:

We can write three-quarters of a kilometre as 750 metres,

and $11\frac{1}{4}$ minutes as 675 seconds.

Rate upstream = $\left(\frac{750}{675}\right)_{\text{m/sec}} = \frac{10}{9}$ m/sec.

Rate downstream = $\left(\frac{750}{450}\right)_{\text{m/sec}} = \frac{5}{3}$ m/sec.

$\therefore$ Rate in still water = $\frac{1}{2}\left(\frac{10}{9} + \frac{5}{3}\right)_{\text{m/sec}}$

= $\frac{25}{18}$ m/sec

= $\left(\frac{25}{18} \times \frac{18}{5}\right)_{\text{km/hr}}$

= 5 km/hr.

13. Speed of a boat in standing water is 9 kmph and the speed of the stream is 1.5 kmph. A man rows to a place at a distance of 105 km and comes back to the starting point. The total time taken by him is:

A.16 hours　　　　　　　B.18 hours
C.20 hours　　　　　　　D.24 hours
Answer & Explanation

Answer: Option **D**

Explanation:

Speed upstream = 7.5 kmph.

Speed downstream = 10.5 kmph.

$\therefore$ Total time taken = $\left(\frac{105}{7.5} + \frac{105}{10.5}\right)_{\text{hours}}$ = 24 hours.

14. A man takes twice as long to row a distance against the stream as to row the same distance in favour of the stream. The ratio of the speed of the boat (in still water) and the stream is:

A.2 : 1　　　　　　　　B.3 : 1
C.3 : 2　　　　　　　　D.4 : 3
Answer & Explanation

Answer: Option **B**

Explanation:

Let man's rate upstream be x kmph.

Then, his rate downstream = $2x$ kmph.

∴ (Speed in still water) : (Speed of stream) = $\left(\dfrac{2x + x}{2}\right) : \left(\dfrac{2x - x}{2}\right)$

$= \dfrac{3x}{2} : \dfrac{x}{2}$

$= 3 : 1.$

---

15. A man rows to a place 48 km distant and come back in 14 hours. He finds that he can row 4 km with the stream in the same time as 3 km against the stream. The rate of the stream is:
A. 1 km/hr   B. 1.5 km/hr
C. 2 km/hr   D. 2.5 km/hr
Answer & Explanation

Answer: Option **A**

Explanation:

Suppose he move 4 km downstream in x hours. Then,

Speed downstream = $\left(\dfrac{4}{x}\right)$ km/hr.

Speed upstream = $\left(\dfrac{3}{x}\right)$ km/hr.

∴ $\dfrac{48}{(4/x)} + \dfrac{48}{(3/x)} = 14$ or $x = \dfrac{1}{2}.$

So, Speed downstream = 8 km/hr, Speed upstream = 6 km/hr.

Rate of the stream = $\dfrac{1}{2}$(8 - 6) km/hr = 1 km/hr.

35. Races and Games

1. In a 100 m race, A can give B 10 m and C 28 m. In the same race B can give C:
A. 18 m   B. 20 m
C. 27 m   D. 9 m
Answer & Explanation

Answer: Option **B**

Explanation:

A : B = 100 : 90.

A : C = 100 : 72.

$B : C = \dfrac{B}{A} \times \dfrac{A}{C} = \dfrac{90}{100} \times \dfrac{100}{72} = \dfrac{90}{72}.$

When B runs 90 m, C runs 72 m.

When B runs 100 m, C runs $\left(\dfrac{72}{90} \times 100\right)$ m = 80 m.

∴ B can give C 20 m.

---

2. A and B take part in 100 m race. A runs at 5 kmph. A gives B a start of 8 m and still beats him by 8 seconds. The speed of B is:
A. 5.15 kmph   B. 4.14 kmph
C. 4.25 kmph   D. 4.4 kmph
Answer & Explanation

Answer: Option **B**

Explanation:

A's speed = $\left(5 \times \dfrac{5}{18}\right)$ m/sec = $\dfrac{25}{18}$ m/sec.

Time taken by A to cover 100 m = $\left(100 \times \dfrac{18}{25}\right)$ = 72 sec.

∴ Time taken by B to cover 92 m = (72 + 8) = 80 sec.

∴ B's speed = $\left(\dfrac{92}{80} \times \dfrac{18}{5}\right)$ kmph = 4.14 kmph.

---

3. In a 500 m race, the ratio of the speeds of two contestants A and B is 3 : 4. A has a start of 140 m. Then, A wins by:
A. 60 m   B. 40 m
C. 20 m   D. 10 m
Answer & Explanation

Answer: Option **C**

Explanation:

To reach the winning post A will have to cover a distance of (500 - 140)m, *i.e.,* 360 m.

While A covers 3 m, B covers 4 m.

While A covers 360 m, B covers $\left(\dfrac{4}{3} \times 360\right)$ m = 480 m.

Thus, when A reaches the winning post, B covers 480 m and therefore remains 20 m behind.

∴ A wins by 20 m.

4. In a 100 m race, A beats B by 10 m and C by 13 m. In a race of 180 m, B will beat C by:

A.5.4 m   B.4.5 m
C.5 m   D.6 m

Answer & Explanation

Answer: Option **D**

Explanation:

A : B = 100 : 90.

A : C = 100 : 87.

$$\frac{B}{C}=\frac{B}{A}\times\frac{A}{C}=\frac{90}{100}\times\frac{100}{87}=\frac{30}{29}.$$

When B runs 30 m, C runs 29 m.

When B runs 180 m, C runs $\left(\frac{29}{30}\times 180\right)_m$ = 174 m.

∴ B beats C by (180 - 174) m = 6 m.

---

5. At a game of billiards, A can give B 15 points in 60 and A can give C to 20 points in 60. How many points can B give C in a game of 90?

A.30 points   B.20 points
C.10 points   D.12 points

Answer & Explanation

Answer: Option **C**

Explanation:

A : B = 60 : 45.

A : C = 60 : 40.

$$\therefore \frac{B}{C}=\left(\frac{B}{A}\times\frac{A}{C}\right)=\left(\frac{45}{60}\times\frac{60}{40}\right)=\frac{45}{40}=\frac{90}{80}= 90 : 80.$$

∴ B can give C 10 points in a game of 90.

6. In a race of 200 m, A can beat B by 31 m and C by 18 m. In a race of 350 m, C will beat B by:

A.22.75 m   B.25 m

C.19.5 m   D.7$\frac{4}{7}$m

Answer & Explanation

Answer: Option **B**

Explanation:

A : B = 200 : 169.

A : C = 200 : 182.

$$\frac{C}{B}=\left(\frac{C}{A}\times\frac{A}{B}\right)=\left(\frac{182}{200}\times\frac{200}{169}\right)= 182 : 169.$$

When C covers 182 m, B covers 169 m.

When C covers 350 m, B covers $\left(\frac{169}{182}\times 350\right)_m$ = 325 m.

Therefore, C beats B by (350 - 325) m = 25 m.

---

7. In 100 m race, A covers the distance in 36 seconds and B in 45 seconds. In this race A beats B by:

A.20 m   B.25 m
C.22.5 m   D.9 m

Answer & Explanation

Answer: Option **A**

Explanation:

Distance covered by B in 9 sec. = $\left(\frac{100}{45}\times 9\right)_m$ = 20 m.

∴ A beats B by 20 metres.

---

8. In a game of 100 points, A can give B 20 points and C 28 points. Then, B can give C:

A.8 points   B.10 points
C.14 points   D.40 points

Answer & Explanation

Answer: Option **B**

Explanation:

A : B = 100 : 80.

A : C = 100 : 72.

$$\therefore \frac{B}{C}=\left(\frac{B}{A}\times\frac{A}{C}\right)=\left(\frac{80}{100}\times\frac{100}{72}\right)=\frac{10}{9}=\frac{100}{90}= 100 : 90.$$

∴ B can give C 10 points.

---

9. In a 200 metres race A beats B by 35 m or 7 seconds. A's time over the course is:

A.40 sec   B.47 sec
C.33 sec   D.None of these

Answer & Explanation

Answer: Option **C**

Explanation:

B runs 35 m in 7 sec.

$\therefore$ B covers 200 m in $\left(\dfrac{7}{35} \text{x } 200\right)$ = 40 sec.

B's time over the course = 40 sec.

$\therefore$ A's time over the course (40 - 7) sec = 33 sec.

---

10. A can run 22.5 m while B runs 25 m. In a kilometre race B beats A by:

A.100 m　　　　　　　B.$111\dfrac{1}{9}$m

C.25 m　　　　　　　　D.50 m

Answer & Explanation

Answer: Option **A**

Explanation:

When B runs 25 m, A runs $\dfrac{45}{2}$ m.

When B runs 1000 m, A runs $\left(\dfrac{45}{2}\text{ x}\dfrac{1}{25}\text{ x }1000\right)$ = 900 m.

$\therefore$ B beats A by 100 m.

11. In a 300 m race A beats B by 22.5 m or 6 seconds. B's time over the course is:

A.86 sec　　　　　　　B.80 sec

C.76 sec　　　　　　　D.None of these

Answer & Explanation

Answer: Option **B**

Explanation:

B runs $\dfrac{45}{2}$ m in 6 sec.

$\therefore$ B covers 300 m in $\left(6\text{ x}\dfrac{2}{45}\text{x }300\right)_{\text{sec}}$ = 80 sec.

---

12. A runs $1\dfrac{2}{3}$ times as fast as B. If A gives B a start of 80 m, how far must the winning post be so that A and B might reach it at the same time?

A.200 m　　　　　　　B.300 m

C.270 m　　　　　　　D.160 m

Answer & Explanation

Answer: Option **A**

Explanation:

Ratio of the speeds of A and B = $\dfrac{5}{3}$: 1 = 5 : 3.

Thus, in race of 5 m, A gains 2 m over B.

2 m are gained by A in a race of 5 m.

80 m will be gained by A in race of $\left(\dfrac{5}{2}\text{x }80\right)_{\text{m}}$ = 200 m.

$\therefore$ Winning post is 200 m away from the starting point.

---

13. In a 100 m race, A can beat B by 25 m and B can beat C by 4 m. In the same race, A can beat C by:

A.21 m　　　　　　　B.26 m

C.28 m　　　　　　　D.29 m

Answer & Explanation

Answer: Option **C**

Explanation:

A : B = 100 : 75

B : C = 100 : 96.

$\therefore$ A : C = $\left(\dfrac{A}{B}\text{x}\dfrac{B}{C}\right) = \left(\dfrac{100}{75}\text{ x}\dfrac{100}{96}\right) = \dfrac{100}{72}$ = 100 : 72.

$\therefore$ A beats C by (100 - 72) m = 28 m.

36. True Discount

1. A man purchased a cow for Rs. 3000 and sold it the same day for Rs. 3600, allowing the buyer a credit of 2 years. If the rate of interest be 10% per annum, then the man has a gain of:

A.0%　　　　　　　　B.5%

C.7.5%　　　　　　　D.10%

Answer & Explanation

Answer: Option **A**

Explanation:

C.P. = Rs. 3000.

S.P. = Rs.$\left[\dfrac{3600 \text{ x } 100}{100 + (10 \text{ x } 2)}\right]$ = Rs. 3000.

Gain = 0%.

---

2. The true discount on Rs. 2562 due 4 months hence is Rs. 122. The rate percent is:

A. 12% B. $13\frac{1}{3}$%

C. 15% D. 14%

Answer & Explanation

Answer: Option **C**

Explanation:

P.W. = Rs. (2562 - 122) = Rs. 2440.

∴ S.I. on Rs. 2440 for 4 months is Rs. 122.

∴ Rate = $\left[\dfrac{100 \times 122}{2440 \times \frac{1}{3}}\right]_{\%}$ = 15%.

---

3. A trader owes a merchant Rs. 10,028 due 1 year hence. The trader wants to settle the account after 3 months. If the rate of interest 12% per annum, how much cash should he pay?

A. Rs. 9025.20 B. Rs. 9200
C. Rs. 9600 D. Rs. 9560

Answer & Explanation

Answer: Option **B**

Explanation:

Required money = P.W. of Rs. 10028 due 9 months hence

= Rs. $\left[\dfrac{10028 \times 100}{100 + \left(12 \times \frac{9}{12}\right)}\right]$

= Rs. 9200.

---

4. A man wants to sell his scooter. There are two offers, one at Rs. 12,000 cash and the other a credit of Rs. 12,880 to be paid after 8 months, money being at 18% per annum. Which is the better offer?

A. Rs. 12,000 in cash B. s. 12,880 at credit
C. Both are equally good

Answer & Explanation

Answer: Option **A**

Explanation:

P.W. of Rs. 12,880 due 8 months hence = Rs. $\left[\dfrac{12880 \times 100}{100 + \left(18 \times \frac{8}{12}\right)}\right]$

= Rs. $\left(\dfrac{12880 \times 100}{112}\right)$

= Rs. 11500.

---

5. If Rs. 10 be allowed as true discount on a bill of Rs. 110 due at the end of a certain time, then the discount allowed on the same sum due at the end of double the time is:

A. Rs. 20 B. Rs. 21.81
C. Rs. 22 D. Rs. 18.33

Answer & Explanation

Answer: Option **D**

Explanation:

S.I. on Rs. (110 - 10) for a certain time = Rs. 10.

S.I. on Rs. 100 for double the time = Rs. 20.

T.D. on Rs. 120 = Rs. (120 - 100) = Rs. 20.

T.D. on Rs. 110 = Rs. $\left(\dfrac{20}{120} \times 110\right)$ = Rs. 18.33

---

6. Goods were bought for Rs. 600 and sold the same for Rs. 688.50 at a credit of 9 months and thus gaining 2% The rate of interest per annum is:

A. $16\frac{2}{3}$% B. $14\frac{1}{2}$%

C. $13\frac{1}{3}$% D. 15%

Answer & Explanation

Answer: Option **A**

Explanation:

S.P. = 102% of Rs. 600 = $\left(\dfrac{102}{100} \times 600\right)$ = Rs. 612.

Now, P.W. = Rs. 612 and sum = Rs. 688.50.

∴ T.D. = Rs. (688.50 - 612) = Rs. 76.50.

Thus, S.I. on Rs. 612 for 9 months is Rs. 76.50.

∴ Rate = $\left(\dfrac{100 \times 76.50}{612 \times \frac{3}{4}}\right)_{\%}$ = $16\frac{2}{3}$%

---

7. The true discount on a bill due 9 months hence at 16% per annum is Rs. 189. The amount of the bill is:

A. Rs. 1386 B. Rs. 1764
C. Rs. 1575 D. Rs. 2268

Answer & Explanation

Answer: Option **B**

Explanation:

Let P.W. be Rs. x.

Then, S.I. on Rs. x at 16% for 9 months = Rs. 189.

$\therefore x \times 16 \times \dfrac{9}{12} \times \dfrac{1}{100} = 189$ or $x = 1575$.

$\therefore$ P.W. = Rs. 1575.

$\therefore$ Sum due = P.W. + T.D. = Rs. (1575 + 189) = Rs. 1764.

---

8. A man buys a watch for Rs. 1950 in cash and sells it for Rs. 2200 at a credit of 1 year. If the rate of interest is 10% per annum, the man:
   A. gains Rs. 55   B. gains Rs. 50
   C. loses Rs. 30   D. gains Rs. 30
   Answer & Explanation

   Answer: Option **B**

   Explanation:

   S.P. = P.W. of Rs. 2200 due 1 year hence

   $= \text{Rs.} \left[\dfrac{2200 \times 100}{100 + (10 \times 1)} \right]$

   $= \text{Rs. } 2000.$

   $\therefore$ Gain = Rs. (2000 - 1950) = Rs. 50.

---

9. The true discount on Rs. 1760 due after a certain time at 12% per annum is Rs. 160. The time after which it is due is:
   A. 6 months   B. 8 months
   C. 9 months   D. 10 months
   Answer & Explanation

   Answer: Option **D**

   Explanation:

   P.W. = Rs. (1760 -160) = Rs. 1600.

   $\therefore$ S.I. on Rs. 1600 at 12% is Rs. 160.

   $\therefore$ Time $= \left(\dfrac{100 \times 160}{1600 \times 12} \right) = \dfrac{5}{6}$ years $= \left(\dfrac{5}{6} \times 12 \right)$ months = 10 months.

10.
    The present worth of Rs. 2310 due $2\frac{1}{2}$ years hence, the rate of interest being 15% per annum, is:
    A. Rs. 1750   B. Rs. 1680
    C. Rs. 1840   D. Rs. 1443.75
    Answer & Explanation

    Answer: Option **B**

    Explanation:

    P.W. $= \text{Rs.} \left[\dfrac{100 \times 2310}{100 + \left(15 \times \dfrac{5}{2} \right)} \right]$ = Rs. 1680.

11. Rs. 20 is the true discount on Rs. 260 due after a certain time. What will be the true discount on the same sum due after half of the former time, the rate of interest being the same?
    A. Rs. 10   B. Rs. 10.40
    C. Rs. 15.20   D. Rs. 13
    Answer & Explanation

    Answer: Option **B**

    Explanation:

    S.I. on Rs. (260 - 20) for a given time = Rs. 20.

    S.I. on Rs. 240 for half the time = Rs. 10.

    T.D. on Rs. 250 = Rs. 10.

    $\therefore$ T.D. on Rs. 260 = Rs. $\left(\dfrac{10}{250} \times 260 \right)$ = Rs. 10.40

---

12. The interest on Rs. 750 for 2 years is the same as the true discount on Rs. 960 due 2 years hence. If the rate of interest is the same in both cases, it is:
    A. 12%   B. 14%
    C. 15%   D. $16\frac{2}{3}$%
    Answer & Explanation

    Answer: Option **B**

    Explanation:

    S.I. on Rs. 750 = T.D. on Rs. 960.

    This means P.W. of Rs. 960 due 2 years hence is Rs. 750.

    $\therefore$ T.D. = Rs. (960 - 750) = Rs. 210.

    Thus, S.I. on R.s 750 for 2 years is Rs. 210.

$$\therefore \text{Rate} = \left(\frac{100 \times 210}{750 \times 2}\right)_{\%} = 14\%$$

---

13. The simple interest and the true discount on a certain sum for a given time and at a given rate are Rs. 85 and Rs. 80 respectively. The sum is:
A. Rs. 1800   B. Rs. 1450
C. Rs. 1360   D. Rs. 6800
Answer & Explanation

Answer: Option **C**

Explanation:

$$\text{Sum} = \frac{\text{S.I.} \times \text{T.D.}}{(\text{S.I.}) - (\text{T.D.})} = \frac{85 \times 80}{(85 - 80)} = \text{Rs. } 1360.$$

---

14. The present worth of Rs. 1404 due in two equal half-yearly installments at 8% per annum simple interest is:
A. Rs. 1325   B. Rs. 1300
C. Rs. 1350   D. Rs. 1500
Answer & Explanation

Answer: Option **A**

Explanation:

Required sum = P.W. of Rs. 702 due 6 months + P.W. of Rs. 702 due 1 year hence

$$= \text{Rs.} \left[\left(\frac{100 \times 702}{100 + 8 \times \frac{1}{2}}\right) + \left(\frac{100 \times 702}{100 + (8 \times 1)}\right)\right]$$

$$= \text{Rs. } (675 + 650)$$

$$= \text{Rs. } 1325.$$

---

15. If the true discount on s sum due 2 years hence at 14% per annum be Rs. 168, the sum due is:
A. Rs. 768   B. Rs. 968
C. Rs. 1960   D. Rs. 2400
Answer & Explanation

Answer: Option **A**

Explanation:

$$\text{P.W.} = \frac{100 \times \text{T.D.}}{R \times T} = \frac{100 \times 168}{14 \times 2} = 600.$$

$$\therefore \text{Sum} = (\text{P.W.} + \text{T.D.}) = \text{Rs. } (600 + 168) = \text{Rs. } 768.$$

THANK YOU ALL

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